

THE EFFECTS OF TWO CAREER GUIDANCE TESTING
PROGRAMS ON THE CAREER DEVELOPMENT
OF TENTH GRADE STUDENTS

BY

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. . . to my wife, Kathy, and my parents,
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Abstract of Dissertation Presented to the Graduate Council
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OF TENTH GRADE STUDENTS

By

R. Wiley Dixon

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Chairman: Robert D. Myrick
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The purpose of this study was to investigate the effectiveness of two career guidance testing programs for facilitating students' career development.

The sample consisted of tenth grade students who were stratified according to English achievement levels. Students were assigned to three experimental conditions based upon students' sex and achievement level.

This study used a three-group posttest only design. The three experimental conditions consisted of participation in (1) the ACT Career Planning Program; (2) the DAT Career Planning Program; and (3) a brief career guidance unit. Students were posttested to obtain measures of career maturity, career self-awareness, and career exploration.

Data were collected on 185 students. A 3 X 3 X 2 factorial two way analysis of variance was conducted for each dependent measure.

The results of this study indicated that there were no significant differences among the ACT Career Planning Program, the DAT Career Planning Program, and a brief career guidance unit in the facilitation of students' career maturity, career self-awareness, and career exploration. The only significant differences found in this study were among different English achievement level groups. Generally, students from higher English achievement levels demonstrated greater career maturity and career self-awareness than students from lower English achievement levels. Students from lower English achievement levels reported more career exploration behaviors than students from higher English achievement levels.

The results of this study suggest that career guidance testing programs have a limited impact on students' career development when used in the traditional "test and interpret" fashion. If career guidance testing programs are to warrant the time and expense required to implement them, more effective strategies for their use must be developed. Further research should be conducted to determine what kinds of supplemental activities and interventions could be used in conjunction with career guidance tests to make them more effective.

CHAPTER I

INTRODUCTION

More than a decade ago, Goldman (1972a) stated that the use of tests in counseling had been a sad disappointment. Using a marital metaphor, he compared testing and counseling to a partnership that was in deep trouble. For a variety of reasons, testing was said to have contributed very little to the counseling process. Furthermore, Goldman was not optimistic about salvaging any constructive relationship between testing and counseling. He predicted that unless there were major changes in tests and testing practices, both tests and testers would be "denounced, ignored, and maybe discarded" (Goldman, 1972a, p. 423).

Goldman's dismal predictions for the future of testing have not come true, at least in the decade following his pronouncement. Indeed, a recent nationwide survey of public and private secondary schools showed the use of standardized tests to be prevalent (Engen, Lamb, and Prediger, 1982). Of the schools responding to the survey, all reported that standardized tests were used in their schools.

Career guidance tests were reported as the most widely used of all standardized tests (Engen, et al., 1982). In ninety-five percent of the schools, some type of vocational

aptitude test batteries or interest inventories were used with some of their students, and in 75 percent such tests were used with all of their students somewhere between grades seven and twelve. In approximately 70 percent of the schools even more career guidance testing would be used if time and funds allowed (Engen, et al., 1982).

If the contributions of testing in the counseling process have been so meager, as Goldman (1972a, 1972b) stated, why is career guidance testing so prevalent? Part of the answer lies in the public's continuing demand for career guidance in the schools. In summarizing eleven years of research on the public's perceptions of public schools, Gallup (1979) stated that the general public believed the ideal school should give much more time to the selection of careers than is currently the case. The demand for increased career guidance has contributed to widespread career guidance testing.

A second reason for the continued use of career guidance testing may be due to the changes in tests themselves. It has long been argued that no single measure should be used in isolation for the purpose of career guidance. Rather, several measures of such characteristics as interests, aptitudes, values, and needs should be used to obtain a composite picture of the client and achieve optimal results from the counseling process (Super and Crites, 1962; Zytowski, 1973).

In the past the assessment of several variables required that different instruments be given at various times during the counseling process. Repeated testing was expensive and burdensome, and it also created difficulties when trying to relate diverse test results to one another. A second problem was that many counselors did not know how to choose tests from the large number available (Anderson & Farmer, 1982).

Recently, new career guidance inventories have been developed which measure a variety of characteristics related to career planning. In addition, these multi-dimensional measures report the results in an organized fashion so that all characteristics are interrelated and can be used together for career planning. The ease with which these tests can be administered and their simplified results has undoubtedly contributed to the recent popularity of career guidance testing. But, there is still some question as to their effectiveness and use in the counseling process.

Need for the Study

While the predicted decline of testing in school guidance programs has not come true, the criticism that testing has contributed little to the effectiveness of the counseling process remains largely unanswered. As Goldman (1972a) pointed out, the value of career guidance inventories to effectively predict success in a given occupation is highly questionable. Predictive validity for even the

most widely used career guidance inventories is primarily based upon their ability to predict school performance rather than success in occupations. The general public has the misperception that career guidance inventories can tell students or clients exactly what career to follow, but the value of career guidance testing is not likely to be found in predicting success in occupations.

Prediger (1972) said that the inability of career guidance inventories to successfully predict a career for clients is not surprising. Career development theories such as those of Super (1953) and Ginzberg (1972) view vocational decision-making not as a one time choice, but as a developmental process in which individuals move through progressive stages of career maturity. Thus, career guidance should do more than help individuals to make choices. The primary goal should be to provide clients with a variety of experiences to facilitate the developmental process. Likewise, the goal and value of career guidance inventories must be seen in terms of how much they facilitate clients' career development rather than how accurately such tests can predict their future jobs.

There are three ways that career guidance testing can assist people in their career development: (1) stimulating, broadening, and focusing career exploration, (2) facilitating self-awareness in relation to careers, and (3) providing predictive information regarding different career choice options (Prediger, 1972). While all of these factors

contribute to career maturity, most of the research on career guidance testing has been concerned only with the predictive quality of tests. The ability of career guidance inventories to facilitate career exploration, career self-awareness, and career maturity has been neglected. Because of the expense and time required for career guidance testing in the schools, there is a need to determine if tests and the guidance process contribute to career exploration, career self-awareness, and career maturity.

Purpose of the Study

Research has been done on the effects of career guidance interventions on career development. However, there is very little research which focuses upon career guidance testing programs and their impact upon career development. It is the purpose of this study to determine what effect career guidance testing programs have on career development. Specifically, this investigation will attempt to determine the effectiveness of career guidance testing programs for facilitating career exploration, career self-awareness, and career maturity of high school students.

Rationale for the Study

This study will be conducted by means of a field experiment as described by Kerlinger (1973). It has several advantages. First, the experimental method is generally regarded as the most sophisticated research method for

testing hypotheses because of the degree of control allowed in an experiment (Ary, Jacobs, and Razavich, 1979).

Kerlinger (1973) stated that the field experiment has advantages in (1) strength of the variables involved, (2) appropriateness for studying complex social processes, and (3) the ability to test broad hypotheses.

Further advantages of the field experiment for this study are that the research is carried out under normal school conditions and a large number of subjects is accessible. Additionally, because this study is concerned with the effects of career guidance assessment in secondary schools, a field experiment using school settings adds significantly to external validity.

Research Questions

The following research questions will receive attention in this study:

1. Do career guidance testing programs have an impact on the career maturity of tenth grade high school students?
2. Do career guidance testing programs have an impact on the career self-awareness of tenth grade high school students?
3. Do career guidance testing programs have an impact on the career exploration behaviors of tenth grade high school students?

4. Do career guidance testing programs differ in their effectiveness for facilitating the career maturity of tenth grade high school students?
5. Do career guidance testing programs differ in their effectiveness for facilitating the career self-awareness of tenth grade high school students?
6. Do career guidance testing programs differ in their effectiveness for facilitating career exploration behaviors of tenth grade high school students?

Definition of Terms

Some of the terms used in this study have been assigned different meanings by various authors. In order to avoid confusion, it seems advantageous to define those terms that are particularly important in this research:

Career development--

. . . the lifelong process of developing work values, crystallizing a vocational identity, learning about opportunities, and trying out plans in part time, recreational, and full time work situations. Development involves increasingly effective investigation, choice, and evaluation of occupational possibilities. Career development may be thought of as an aspect of general development. (Tolbert, 1980, p. 25)

Career exploration behavior--behavior directed toward gaining information regarding education or training, careers, career options, or personal characteristics related to career options.

Career guidance inventory--any standardized measure which yields quantitative scores on a variety of personal characteristics related to career options.

Career guidance testing program--the administration and interpretation of scores of career guidance inventories and tests.

Career maturity--an individual's attained point in career development as compared to his peers.

Career self-awareness--self knowledge regarding one's abilities, attitudes, interests, and values as they relate to the world of work.

Organization of the Study

The remainder of the study is organized into four chapters. In Chapter II the professional literature is related to career education, career development theories, career guidance interventions, and career guidance inventories. The research methodology, data collection, and analysis procedures are described in Chapter III. The results of the study are presented in Chapter IV, including analysis of the data. Chapter V contains a summary of the study, discussion of results, conclusions drawn from the research, and recommendations for further research.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Counseling and education have long been associated with occupational training and placement. Even before the concept of career development emerged, vocational guidance and vocational education were viewed as means of improving the plight of large numbers of people relegated to dead end jobs and poor living conditions. Despite periodic changes in the emphasis placed upon vocational guidance and education, there still exists a need to provide vocational training and counseling in the schools (Tolbert, 1980).

Sidney P. Marland (1979), former Assistant Secretary of Education, said that the goal of elementary and secondary education in the United States can be simply stated as the preparation of ". . . all students as well-developed people to enter successfully either a job or some form of post-secondary education, whichever they choose, as soon as they leave the elementary-secondary education system" (p. 43). However, Marland (1979) also noted that only two out of ten secondary students receive vocational training and two out of ten finish four years of college. It appears that, although only 20 percent of high school students ever complete a college degree, secondary school curricula and

counseling activities are heavily oriented toward college preparation (National School Public Relations Association, 1974). Over half of the students who should receive preparation for work entry are not being adequately trained. These students, who follow what is referred to as a "general curriculum" and the students who drop out of school, consume almost one-third of the entire educational expenditure for the nation. Yet, based upon the education they receive in school, these general curriculum and dropout students are not prepared to leave school and enter employment (Marland, 1979).

The failure of schools to adequately prepare such a large portion of students has some profound consequences. The United States has the highest youth unemployment rate of any nation in the world. Every year an estimated 2.5 million young people leave the school system and enter the pool of unemployed or underemployed workers. These unemployment figures seem paradoxical when the United States Department of Labor is predicting serious shortages of workers in a wide variety of career fields that require special training and skills. Unfortunately, vocational education programs which might prepare students for these specialized fields are only made available to 25 percent of students.

Facts like those cited above have led many educators to call for a basic change in the structure of American education. Marland summed up the beliefs of these educators when

he proposed a system of education which would provide career orientation and preparation programs to help every student choose and receive training for a career (National School Public Relations Association, 1974). Labeled career education, the proposal has received widespread support over the last decade.

Career Education in the United States

While the term "career education" is relatively new, the ideas underlying the term are not. The goals of career education can be traced to the beginnings of American high schools (Hoyt, Evans, Mangum, Bowen, & Gale, 1977).

The first secondary schools established in America during the nineteenth century were academies designed to teach Latin and Greek and prepare young men for a narrow range of careers requiring a college education. Since most men did not go to college, there existed a need for occupational training past the elementary level. This need resulted in the creation of the first "English high school" in Boston in 1820. The school was referred to as an English high school because it taught English rather than Latin or Greek. Yet, the school's primary purpose was occupational training (Hoyt et al., 1977).

During the 1800's the English high schools, supported by public taxes, flourished and expanded. The college preparatory academies, on the other hand, faced financial difficulties and were on the verge of collapse. To save the

academies, they were combined with the publicly supported English high schools to form comprehensive high schools, which would serve all students through programs designed for college preparation or occupational training. Within a short time, the occupational training aspects of the old English high schools had been subverted and the comprehensive high schools concentrated on academic curricula (Hoyt et al., 1977). Thus, with the establishment of the comprehensive high schools, the chance for vocational training was lost to most people.

Federal legislation in 1862, 1887, 1890, and 1906 substantially aided vocational programs in colleges. Senator Carroll S. Page noted only 1.7 percent of the total school population attended college. Page proposed legislation which would move vocational training into elementary and secondary schools. Such training would also include a strong guidance component to help steer students into appropriate occupations. While Page's proposals were not immediately adopted into legislation, his support for vocational training raised law makers' awareness of the need for such training in public schools (Barlow, 1973).

The Smith-Hughes Vocational Education Act of 1917 led to the establishment of two to four years of specific job training in secondary schools. From 1917 through the 1930s, vocational training was promoted to meet the manpower needs of local communities and consisted primarily of

agriculture and home economics programs (Hoyt, Evans, Mackin, & Mangum, 1974).

In 1913, the National Commission on the Reorganization of Secondary Education established seven goals which have continued to remain widely accepted goals of the high school. One of those goals was vocational training. In 1918, the Educational Policies Commission developed a list of ten curriculum needs to be addressed by high schools. The first need listed by that commission was the need for training in salable skills and work activities (Alexander, Saylor, & Williams, 1971). Despite the recommendations of these two commissions, vocational education was still a low priority through the first half of this century (Hoyt et al., 1977).

The 1960s began an era of resurgence in vocational education. "Project Talent," a large longitudinal study of high school students begun in 1960, showed clearly that two thirds of the students in high school general curriculums dropped out, and those who did graduate had very limited success in employment or college (Hoyt et al., 1977). Vocational educators began to point out that only a small percentage of future jobs would require a college degree, whereas the need for skilled paraprofessionals and technicians was projected to be very high (Ressler, 1973).

The Vocational Education Act of 1963 attempted to redirect the high school curriculum. This act bridged the gap between education and work through several means:

(1) the expansion of existing vocational programs, (2) the development of new programs, (3) providing part-time employment for youth in vocational training, and (4) expanding vocational training to include adults and handicapped individuals. One of the intentions of this act was to make vocational education more flexible and attractive to more students. However, emphasis was still placed on the upper secondary grades and adult education. Students in elementary and lower high school grades continued to lack information and training related to careers. Furthermore, vocational education was still separated from general education and suffered from a poor image due to the emphasis most schools placed on college preparatory activities (Ressler, 1973).

The 1968 amendments of the Vocational Education Act changed the structure of vocational education substantially. These amendments expanded vocational education downward into the elementary and junior high school grades and included related academic instruction as part of vocational training. For the first time, occupational guidance to aid students in making career choices was viewed as a necessary part of vocational education programs. Rather than emphasizing only occupational training, career orientation courses were also incorporated into vocational education (Ressler, 1973). The Advisory Council on Vocational Education summarized the new direction of vocational education and presaged career education in a 1967 report which stated,

Vocational education cannot be meaningfully limited to the skills necessary for a particular occupation. It is more appropriately defined as all of those aspects of educational experience which help a person to discover his talents, to relate them to the world of work, to choose an occupation, and to refine his talents and use them successfully in employment. (Evans, Mangum, and Pragan, 1969, p. 63)

Obviously, the changes in vocational education were precursors to the concept of career education.

Career education was officially given birth in 1971 when Sidney Marland, then United States Commissioner of Education, made it the top priority of the United States Office of Education. Marland viewed career education as a desirable way of reshaping the country's educational system. "Career education will be part of the curriculum for all students, not just some," said Marland.

It will continue throughout a youngster's stay in school from the first grade through senior high and beyond, if he so elects...Every student leaving school will possess the skills necessary to give him a start toward making a livelihood for himself and his family, even if he leaves before completing high school. (National School Public Relations Committee, 1974, p. 5)

Few concepts introduced into education have received such instant acceptance and acclaim as career education. However, although educators generally like the concept, there is no universally accepted definition of career education. Even the United States Office of Education has carefully refrained from providing a definition, preferring instead to let state and local agencies define it according to their own needs (National School Public Relations Committee, 1974). Herr (1979), in a comprehensive review of

research on career education, broadly defined career education as "the totality of experiences through which one learns about and prepares to engage in work as part of his or her way of living" (p. 9).

The National Vocational Guidance Association (NVGA) related career education more specifically to the organized effort of the United States Office of Education to promote the concepts of career education nationally. The NVGA defined career education as

an effort aimed at refocusing American education and the actions of the broader community in ways that will help individuals acquire and utilize knowledge, skills and attitudes necessary for each to make work a meaningful, productive, and satisfying part of his/her way of living. (Sears, 1982, p. 138)

In discussing the definitions that have been proposed for career education, Hoyt, et al. (1974) found that most definers seem to agree on several key points: (1) career education deals with preparation for work, (2) career education is more than training for specific job skills, (3) career education is for all students, and (4) the responsibility for career education must extend beyond the schools to other community agencies.

The definitions of career education offered above are very broad, as are the programs that have been developed around the country to implement career education (Hoyt et al., 1974). However, most existing career education programs share some common features:

1. The integration of career development through the entire curriculum.
2. The integration of school and community through exploratory work and volunteer experiences in the community.
3. Hands-on experiences in career exploration.
4. Self-awareness and understanding in order to develop and coordinate one's self in relation to one's career.
5. Awareness of options in the realm of human values and relating values to career patterns.
6. Career resource centers.
7. In-service training of faculty.
8. Counseling, placement, and follow-up services. (Baird, 1975, p. 3)

Career education as a concept has been popular, and different career education models have been developed (Hoyt et al., 1974). However, there is no consensus of how career education programs should be organized or what they should include. The lack of consensus regarding precisely what constitutes career education has led to criticism and concern about the efficacy of career education. Kenneth B. Hoyt (1979), a major proponent of career education, pointed out, "Until some general agreement and understanding can be reached regarding the nature of career education 'treatment,' it will continue to be impossible to evaluate the effectiveness of career education" (p. 1).

The Role of School Counselors in Career Education

The United States Office of Education and the American Personnel and Guidance Association have both issued policy statements which identify the role of the school counselor in career education. In reviewing these statements, Hoyt et al. (1977) stated that this role can be divided into four

functions: (1) the counselor as career education coordinator, (2) the counselor as provider of occupational information, (3) the counselor as teacher of decision-making skills, and (4) the counselor as career development theorist.

As a coordinator for career education activities in the school, counselors must work toward establishing a scope and sequence plan for career education in the curriculum. They must encourage teachers to infuse career education concepts and approaches into classroom practice. Also, because they usually have more professional expertise in student appraisal procedures, counselors must provide leadership in conducting needs assessments and program evaluations in career education.

School counselors also play a vital role in career education by providing occupational information to students and teachers. Students need information about occupations and training programs in order to facilitate career development and decision making. Teachers, whose expertise may lie in other areas, need information about occupations and career education concepts and methods so they may infuse career education into their daily classes more effectively and efficiently.

In order to teach career decision making skills, the school counselor must recognize that such decision making is a life-long process. Career decision making involves understanding oneself and the world of work and being able

to recognize how the two are related. Thus, career decision making involves more than helping students make a one-time career choice. The counselor must help facilitate students' overall career maturity so that rational career decision making becomes an on-going part of students' continuous career development. ✓

Finally, counselors can further the goals of career education by understanding the process of career development and sharing that understanding with parents, teachers, administrators, and school boards. Career education is based upon contemporary career development theories which view career decision making as a continuous, developmental process spanning infancy to old age (Hoyt et al., 1974). ✓

Career Development Theories

Career education may be more indebted to career development theory than to vocational legislation and practice. Traditionally, it was thought that occupational placement could be facilitated through a simple process of analyzing job skill requirements and finding workers who had traits which fit those requirements. This method proved fruitless because neither job factors nor personal traits are fixed and immutable. Career development theories emphasize the developmental nature of the career choice process and the need for a variety of life-long experiences to facilitate career maturity. Thus, career development theories pointed out the value of career education for every student, not

just those in vocational education programs (Hoyt et al., 1974).

In an early monograph, Ginzberg et al. (1951) noted that most research in the area of vocational counseling had been aimed toward the improvement of counseling techniques rather than the development of a comprehensive theory of how vocational choices are made and implemented. He implied that practicing vocational counselors were actually working without any such theory primarily because most of their time was dedicated to practice rather than to research on a sound theory which might lead to more effective counseling results. Ginzberg's statement seemed to challenge professionals working in the vocational counseling field and a variety of theories resulted which have been proposed to explain the career choice process. Tolbert (1980) classified career development theories into five categories: (1) developmental, (2) needs, (3) psychoanalytic, (4) sociological, and (5) decision making. Of these five general categories, the developmental theories have had the greatest impact on career education and career guidance (Hoyt et al., 1977) and will, consequently, receive the most attention in this research. However, because of their applicability to the school setting, specific theories in the needs and decision making categories will also be discussed.

Gelatt's Decision Making Theory

Gelatt (1966) proposed a career development theory which emphasized the decision making process. He outlined a four step model (Tolbert, 1980). In general these were:

1. Purpose or objective. The individual is aware of the need to make a decision and must define the purpose or objective of the decision.

2. Data collection. Based upon the purpose or objective of the decision, data are collected to aid the decision making process.

3. Utilization of the data. In this step the individual first considers the possible alternatives as well as possible outcomes. Next, based upon personal values, the individual evaluates the desirability of each of the possible outcomes. Finally, the individual evaluates previous steps in selection of a decision.

4. Decision. A decision is made which may be either terminal or investigatory. Terminal decisions result in action which produces feedback about the suitability of the decision. Investigating decisions produce further investigation into the problem (Tolbert, 1980).

Gelatt's model portrays career development as a cyclical process of decision making. Each decision depends upon past conditions and each influences the future (Tolbert, 1980). Decision making theories similar to Gelatt's have been proposed by Katz (1963) and Kaldor and Zytowski (1969).

Holland's Needs Theory

Holland's theory is based on the assumption that vocational interests are one aspect of what is commonly called personality. If an individual's vocational interests are described, his personality is likewise described (Weinrach, 1979). Holland's theory proposes that certain personality types seek out specific environments that match their interests, and that work environments are characterized by the people who occupy them.

Holland (1973) proposed that every individual resembles one of six personality types. The closer one resembles a particular type, the more the individual displays behavior characteristic of that type. He further proposes that there are six types of environments corresponding to the six types of personalities. Weinrach (1979) has described the six personality types:

1. The realistic individual prefers activities involving the systematic manipulation of machinery, tools, or animals. Such an individual may lack social skills.
2. Investigative people tend to be analytical, curious, methodical, and precise. A typical investigative occupation is that of a biologist. Investigative individuals often lack leadership skills.
3. Artistic individuals tend to be expressive, nonconforming, original, and introspective. Decorators and musicians are artistic types. Artistic individuals may lack clerical skills.
4. Social individuals enjoy working with and helping others but avoid ordered, systematic activities involving tools and machinery. Bartenders, funeral directors, and counselors are all social types. Social types tend to lack mechanical and scientific ability.
5. Enterprising individuals enjoy activities that entail manipulating others to attain

- organizational goals or economic gain, but they tend to avoid symbolic and systematic activities. Salespeople, office managers and lawyers are enterprising types. Enterprising individuals often lack scientific ability.
6. Conventional types enjoy the systematic manipulation of data, filing records, or reproducing materials. They tend to avoid artistic activities. Secretaries, file clerks, and financial experts are conventional types. (Weinrach, 1979, p. 86)

In addition to the basic idea that people seek out environments that match their personalities, Holland (1973) also proposed four concepts which underly his theory. Consistency concerns the degree to which an individual's personality or a particular environment resembles one of the six types. Originally, Holland (1966) believed every individual and environment could be characterized as a single type. However, he revised his theory (Holland, 1973) to indicate that while individuals or environments may be viewed as belonging to predominately one type, they may have some characteristics more closely associated to a second or third type. The degree to which all of these characteristics are similar determines consistency.

A second important concept to Holland's theory is differentiation. Differentiation concerns the degree to which a personality or environment resembles a specific type and is distinctly different from other types. An individual or environment showing equal resemblance to all six types would be undifferentiated.

Congruence, a third important concept in Holland's theory, refers to how well an individual's personality

matches his environment. The greater the match between personality and environment, the greater the congruence.

The last central concept of Holland's theory is calculus. Calculus refers to the relationship between various types or environments. Holland (1973) explains calculus thusly:

The relationships within and between types or environments can be ordered according to a hexagonal model in which the distances between the types or environments are inversely proportional to the theoretical relationship between them.
(p. 5)

Holland's career development theory has probably stimulated more research than any other such theory. Additionally, two psychometric instruments developed by Holland, the Vocational Preference Inventory and the Self Directed Search, have been used widely in research and counseling. In spite of its popularity, however, Holland's theory has been strongly criticized. For example, Crites (1978b) has referred to Holland's theory as nothing more than the old Minnesota matching model couched in conventional terms.

Developmental Theories

One of the earliest career development theories was proposed by Ginzberg et al. (1951), and later revised by Ginzberg (1972). The original theory had three key elements. First, occupational choice was seen as a decision-making process that extends from prepuberty through the late teens or early 20's. Ginzberg et al. (1951) theorized that

this process passed through several periods. Until the approximate age of 11, a child is in the fantasy period. During this period the child lacks the ability to recognize any limitations of occupational opportunities and therefore believes that it is possible to enter any occupation. Toward the end of the fantasy period, the child begins to face the necessity of eventually making a career choice.

During the tentative period, from approximately 11 to 17 years of age, the individual begins to make tentative career choices based on abilities, interests, and values. There are three substages of the tentative period:

- (1) interests, in which the individual's interests dominate career choice, (2) capacities, in which abilities play an increasingly important role in career choice, and
- (3) values, the substage at which values dominate both interests and abilities in the career choice process.

The last developmental period, according to Ginzberg's et al. (1951) original theory is the realistic period, from approximately 17 years of age through early adulthood. During this period the individual becomes more mature and realizes that compromises must be made because of environmental circumstances. The realistic period has three substages: (1) exploration, characterized by final exploration of occupational opportunities, (2) crystallization, during which the individual actually makes a career choice, and (3) specification, the substage in which the choice

becomes more specific and action is taken to implement the career decision. Ginzberg et al. viewed the realistic period as the final phase of the career decision-making process.

The second key element of Ginzberg's et al. (1951) theory is the concept of irreversibility. According to this concept, many educational and other preparatory activities for career choice are irreversible. Once a particular action has been taken, it cannot be changed. Therefore, career decision making is a one-way process. An individual cannot back up and start the process anew.

The third element of this theory is the idea of compromise. Ginzberg et al. (1951) believed that an individual must compromise between personal preferences and realities of the world of work. An individual may not be able to make career decisions based solely upon interests, capacity, or values, but may instead have to weigh heavily situational constraints in the career choice process.

Two decades after the original theory was formulated, Ginzberg (1972) revised the theory based on conclusions drawn from twenty years of research. The career decision making process was extended beyond early adulthood. Ginzberg (1972) stated, ". . . we now believe the process to be open-ended, that it can coexist with the individual's working life" (p. 169).

The concept of irreversibility has been virtually eliminated. Ginzberg (1972) believes that educational and

occupational choices do have a cumulative effect on career opportunities, but the effect is not irreversible. A complete change in career direction is possible. Instead of the concept of irreversibility, Ginzberg (1972) stresses that, ". . . the key challenge young people face . . . is to develop a strategy that will keep their options open . . ." (p. 171).

Compromise as an element of the decision making process has been reconsidered by Ginzberg (1972). The idea of compromise seems to still be relevant, as Ginzberg (1972) believes that no individual ever makes an occupational choice based solely on personal needs and desires. However, Ginzberg replaced the term compromise, preferring instead the more positive concept of optimization. Explained Ginzberg (1972),

Men and women seek to find the best occupational fit between their changing desires and their changing circumstances. Their search is a continuing one. As long as they entertain the prospect of shifting their work and career, they must consider a new balance in which they weigh the punitive gains against the probable costs. Our studies . . . have persuaded us to move from the static concept of compromise to the dynamic counterpart of optimization. (p. 171)

Ginzberg's theory (Ginzberg et al., 1951; Ginzberg, 1972) has received some support from research. Studies by Davis, Hagan, and Strouf (1962) and Hollander (1967) support the idea of increasingly realistic career choices with increased age. Research by Small (1952) supports the concept of compromise.

A second widely accepted developmental theory is that of Donald Super (1953). In reply to some of Ginzberg et al.'s (1951) criticisms regarding vocational counseling, Super (1953) set forth the basis for a theory of career development which he felt was inherent in and emergent from the research and philosophy of psychologists and counselors over two decades of work. Super identified a number of elements to which he felt any comprehensive theory of vocational development should address itself. These elements were: individuality, multipotentiality, occupational ability patterns, guidance of development, development as the result of interaction, dynamics of career patterns, job satisfaction, and work as a way of life. Super set forth ten propositions which he felt outlined a comprehensive theory of vocational development. Super's theory concentrates on four major areas: vocational life stages, vocational maturity, translating the self concept into a vocational self concept, and career patterns.

The concept of vocational life stages draws heavily upon the work of early developmental psychologists, particularly Charlotte Buehler (Super, 1969). Super has identified five vocational life stages and the approximate ages at which they occur. The Growth Stage (ages birth to fourteen) is the stage in which the self concept develops through interaction with key figures in the person's life. While passing through three substages within the Growth Stage, the

individual progresses from a state where needs and likes dominate his vocational development into a stage where abilities are given a higher consideration. In the Exploration Stage (ages fifteen to twenty-four) the individual goes through a period of self examination and role try-out. In progressing through three substages within the Exploration Stage the individual considers his needs, capacities, values and opportunities, and makes a series of tentative occupational choices based on his assessments. Reality factors play an increasingly important role during this stage. At the conclusion of the Exploratory Stage the individual enters a beginning job as a continuing part of the exploration. In the Establishment Stage (ages twenty-four to forty-four) an appropriate field of work is found and the individual makes an effort to secure a firm place within this field. Some shifting of jobs in the initial phases of this stage may occur before the individual begins to establish a satisfactory niche. During the Maintenance Stage (ages forty-five to sixty-four) the individual works to progress within the occupational field which has been chosen. The Decline Stage (age sixty five on) may bring on diminished capacities and a subsequent change or reduction in job duties. Work may cease altogether as a result of retirement (Tolbert, 1980).

Super (1969) defined vocational maturity as "the behavior of the individual, compared with that of others coping with the same tasks" (p. 3). Super (1969) identified

these vocational developmental tasks as crystallizing a vocational preference, implementing the preference, stabilizing in the chosen vocation, consolidating one's status, and advancing in the occupation. Obviously, mastery of these various tasks would span several of the life stages.

The translation of the self concept into a vocational self concept is of major importance in Super's theory. Super (1969) believes that the expression of an occupational preference is an attempt by the individual to state his ideas of the kind of person he is in occupational terms. Thus, the development through the life stages coincides with the development of a vocational self concept. An individual with a poorly defined self concept would find it much more difficult to make sound vocational choices or to implement a career plan.

Super also believes that individuals can be classified according to career patterns. Some individuals change occupations often throughout life while others tend to stabilize in an occupation for long periods of time. Stable, conventional career patterns seem to characterize individuals of higher socioeconomic levels while unstable career patterns are more characteristic of people from lower socioeconomic levels.

Super's theory of vocational development has led to a large body of research to assess the validity of its constructs. The Career Pattern Study was a twenty year longitudinal study of 280 eighth and ninth grade boys which

tested various aspects of Super's theory (Tolbert, 1980). Some of the evidence gathered in this study supports the major elements of Super's theory. Vocational maturity appears to increase with age and advancement in school. Most ninth grade subjects did not seem to have the vocational maturity needed to make sound vocational decisions. Such maturity increased by twelfth grade. Also, vocational maturity as judged by occupational information, planning, and interests for ninth and twelfth grade subjects was significantly related to vocational success in early adulthood. Thus, vocational maturity seems to play a major role in vocational development (Super, 1969).

Other evidence from the Career Pattern Study gives support to Super's concept of vocational life stages. There appears to be a definite stage of exploration and possible floundering during the early twenties and a subsequent settling down to a particular occupation during the mid-twenties. This supports Super's description of occurrences during the Exploration Stage of development (Super, 1969).

The construct of a vocational self concept as an essential part of vocational development has also received research attention. Blocher and Schutz (1961) have shown that self concepts of subjects closely resembled their own description of people working in their most preferred occupations. Work done with subjects involved in career changes indicated that subjects identified their self concept as being much closer to the occupation they were

entering than to the occupation they were leaving (Super, 1969). Thus, there is evidence that self concept and vocational preference are related.

The emergence of career development theories has affected career guidance and counseling practices in the schools (Hoyt et al., 1974). The theories of Ginzberg (1972) and Super (1969), in particular, have pointed out the developmental nature of the career choice process. Consequently, career guidance interventions have shifted their emphasis from trying to help students make a one-time career choice to providing a series of experiences which promote students' career development.

Career Guidance Interventions

Career guidance began approximately 75 years ago as an attempt to help low income youngsters find jobs after they finished school. During the 1930s, career guidance focused on matching men with jobs that best suited their abilities, as measured by newly developed aptitude tests. By the 1950s it had evolved into a psychological development approach. A broad range of human characteristics such as attitudes, interests, and aspiration were considered important aspects of career development, and career development was viewed as an integral part of overall development (Ginzberg, 1972).

More recently, career guidance has been broadly defined as activities and programs that assist individuals to assimilate and integrate knowledge, experience, and

appreciations related to self understanding, understanding of the work of society, awareness of the importance of leisure time, understanding of factors involved in career planning, and decision making skills (Sears, 1982).

Considering the history and scope of guidance, it is not surprising to find that many different types of career guidance interventions have been tried to facilitate career development. The evaluative research on career guidance interventions suggests that a variety of interventions has resulted in small, consistently detectable gains on a wide range of outcome variables (Takai & Holland, 1979).

Programs as Interventions

Some research on career guidance interventions has shown that they have a significant effect on outcome variables, without attempting to specify the exact nature of the interventions themselves. These research reports focused on the effects of programs rather than specific interventions.

Omwig, Tulloch, and Thomas (1975) studied the effects of a school-wide career education program on the career maturity of 240 sixth and eighth grade students. Using a pretest/posttest design with a control group, they found that students working in classes where the curriculum was developed around a career education model displayed consistently higher scores than others in career maturity. Three measures of the Career Maturity Inventory were used:

occupational knowledge, occupational planning, and career maturity attitudes.

In a similar study, Perrone and Kyle (1975) researched the effects of a three year career development program in grades seven through nine. The career development program consisted of strategies for integrating career development learning experiences into the regular curriculum. Over 2300 eighth grade students, randomly selected after being stratified by sex and academic ability, were pre- and posttested with the Readiness for Vocation Planning Scale and a knowledge of careers instrument. Compared to a similar number of ninth grade students who had not participated in the career development program, the eighth grade participants had higher scores on both readiness for vocational planning and knowledge of careers. The authors attributed these gains to the school career development program.

Mencke and Cochran (1974) studied the impact of a structured outreach program on the career development of 64 volunteer male college students. Subjects in the study participated in a workshop which incorporated a variety of interventions, including self assessment of personal attributes, fantasy experiences, a self administered interest test, and goal setting exercises. Subjects were compared to a control group and found to be significantly higher on behavioral measures of information seeking, number of occupations under consideration, and congruence of occupational alternatives being considered with measured

interests. No differences were found in attitudes about changing a career or perceptions of strengths and weaknesses.

While the studies cited above were concerned with studying the effects of broadly defined career guidance programs, more evaluative research has been conducted to determine the effects of specific types of career guidance interventions.

Presentation of Occupational Information

Some researchers have studied the effects of various methods of disseminating information. Yungman (1969) studied three different modes of distributing occupational information to noncollege-bound Negro adolescents. Eighty subjects were randomly distributed into one of three treatment modes and a control group. Subjects in the three treatment modes received occupational information through either pictorial-auditory, auditory, or written modes. He found that vocational learning of occupational information was significantly higher for all experimental groups. The pictorial-auditory mode produced the highest degree of learning. There were no significant differences among any of the groups on congruity of expressed and measured interests related to occupations (Youngman, 1969).

Jepsen (1972) has also studied different modes of presenting occupational information. Specifically, he studied the effect of videotaped field trips on occupational

knowledge among 262 ninth grade students. Using a non-equivalent control group research design Jepsen (1972) found that rural ninth graders who studied printed materials and viewed local occupational field trips reported accurate images of the occupations studied significantly more frequently than did a comparable group using printed materials alone. In a similar study, Johnson, Korn, and Dunn (1975) found that high school students who viewed a slidetape presentation had a more positive attitude toward the program than either the listening or control group.

Jones and Krumboltz (1970) studied the effects of participatory behavior with the presentation of occupational information. In their study, 270 subjects were randomly assigned to one of three treatment groups or four control groups. The three experimental film treatments consisted of (a) active-overt participation in which students solved occupational problems and wrote answers, (b) active-covert participation in which no written answers were required for problems, and (c) passive participation in which no problems were assigned. Subjects in the control groups saw films on careers of banking or received printed materials about careers. Jones and Krumboltz (1970) found that all of the treatments produced more positive interests and attitudes toward the banking industry, and that active participation with films generated more positive interest and attitudes than passive participation. However, none of the experimental treatments affected career exploratory behavior.

English (1974) compared two relatively new modes of presenting occupational information. The Connecticut VIEW system, a microfilm-aperture card system containing occupational information, was compared to the occupation informational file of the Guidance Information System (GIS), a computerized guidance system. Subjects for the study were 150 high school students randomly assigned to one of two treatment groups or a control group. English (1974) found that both the VIEW System and GIS significantly improved subjects' vocational maturity as compared to control subjects. However, no difference in vocational maturity was found between the students who used VIEW and the students who used GIS.

Counseling as an Intervention

Many researchers, believing that the presentation of occupational information alone is inadequate for facilitating career development, have studied a variety of specific counseling strategies. Krumboltz and Schroeder (1965) researched the effects of reinforcement contingencies on information seeking behavior of 54 eleventh grade students. The subjects were assigned to three treatment groups in which (a) information seeking responses were reinforced by a counselor, (b) tape recordings in which a counselee was reinforced for information seeking behaviors were played, or (c) no counseling was received (control). The results showed that both types of reinforcement counseling treatment

produced significantly greater information seeking behavior by the subjects. Similar studies by Krumboltz and Thorensen (1964) and Meyer, Stroweg, and Hosford (1970) have also demonstrated the efficacy of brief behavioral counseling methods for facilitating career exploratory behavior.

Jepsen, Dustin, and Miars (1982) studied the effects of three distinct types of counseling interventions on the career exploratory and career decision making behaviors of eleventh grade students. Forty-eight subjects participated in either guided field trips, cognitive problem solving training, or behavioral problem solving training. The results showed that both types of problem-solving training were superior to field trips in facilitating career exploratory and career decision making behavior.

Group Versus Individual Counseling

A number of researchers not only concerned themselves with the effect of counseling on career development, they also focused on the differential effects of individual versus group counseling. In an early study, Hoyt (1955) studied the effects of group versus individual vocational counseling on the degree of certainty, satisfaction, and realism of career choice among 60 male college freshmen. Hoyt (1955) found that both individual and group counseling subjects were more certain and realistic about career choices than comparable control subjects. There was no significant difference on any of the dependent variables

between the individually counseled and group counseled subjects.

In a study similar to Hoyt's (1955), Smith and Evans (1973) studied the differential effects of individual, group, and no counseling (control) on the vocational development of sixty-six college freshmen. Subjects in the individual counseling setting participated in two to four individual counseling sessions with a career counselor. Subjects in the group setting participated in a five week career guidance program which consisted of three activities per week. Activities included individual assignments, large group meetings, and small group counseling sessions. Smith and Evans (1973) found that both individual and group counseling strategies were effective in facilitating vocational development as measured by the Vocational Decision Checklist. Additionally, the group counseling setting was found to be significantly more effective than the individual counseling setting for facilitating vocational development. One major research problem with the Hoyt (1955) and Smith and Evans (1973) studies was that counseling techniques and time were different for subjects in the individual and group settings.

Krumboltz and Thorensen (1964) also studied the effects of individual versus group counseling, but their research kept the counseling procedures constant in both counseling settings. One hundred ninety-two eleventh grade students were randomly assigned to individual and group settings in

which similar behavioral strategies were employed by the counselors. Results of this study showed that both individual and group counseling behavioral strategies were effective in facilitating career information-seeking behavior when compared to no counseling. No significant difference in career information-seeking behavior was found between individual and group counseling subjects.

Hanson and Sanders (1973) studied the differential effects of individual versus group counseling on realism of vocational choice among 60 eleventh and twelfth grade boys. Subjects were divided into two groups of 30 extreme overshooters or 30 extreme undershooters in relation to career choice. Subjects in each of these groups were then further divided into individual counseling, group counseling, or control settings. No significant difference was found between those counseled and controls on realism of career choice. However, a significant interaction effect indicated that the undershooters who were counseled individually became more realistic in their vocational choices.

Graff, Danish, and Austin (1972) compared the effectiveness of three modes of vocational counseling--individual, group, and programmed self-instruction--on seven criteria related to vocational information, values, decision making, personal and social factors, and goal setting. Two hundred and nineteen college students were randomly assigned to one of the three treatment groups or a

control group. Subjects in the individual counseling setting met with a counselor for two to three individual sessions of approximately 55 minutes. Sessions were conducted according to the expressed needs of each client. Subjects in the group setting participated in three to four small group sessions lasting about 90 minutes. Subjects in the programmed self-instruction setting worked in the Self-Help Vocational Decision Making Booklet (Danish, Graff, & Gensler, 1969). Results of the study showed all three counseling modes to be superior to the control setting on all criteria tested. In addition, the programmed self-instruction mode was found to be superior to both group and individual counseling in improving acquisition of vocational information, decision making, and goal setting.

Computer-Based Career Guidance Interventions

A relatively new but burgeoning development in the field of career guidance is the use of computer-based career guidance programs. Such programs have been designed to provide guidance functions as well as vocational and educational information (Super, 1970).

Maola and Kane (1976) studied the effectiveness of computers for providing occupational information. Selected from a population of disadvantaged high school students, 72 subjects were randomly assigned to individual guidance from either a computerized occupational information system (the Computerized Vocational Information System), a

counselor-based information system, or a control group. Posttests using the Assessment of Career Development showed that both the computer group and the counselor group learned more occupational information than the control group. Also, the computer group learned significantly more than the counselor group.

Pilato and Myers (1973) studied the effects of a computer based vocational exploration system that was still being developed on the accuracy of self-knowledge concerning intelligence and interests among 128 eleventh grade males. Subjects were randomly assigned to three experimental groups or a control group. One group was given computer-generated accuracy of self-knowledge feedback printouts, another group was taught an occupational classification system, and the third experimental group experienced both. Initial posttests indicated that subjects who received the computer-generated feedback showed increased accuracy about their intelligence, but not their interests. A delayed posttest indicated that the increase in accuracy of self-knowledge did not persist. A later study by Pilato and Myers (1975) using the same treatments showed that the computer-generated feedback did improve the appropriateness of career choice of eleventh grade males. This improvement persisted through a delayed posttest.

Myers, Lindeman, Thompson, and Patrick (1975) studied the effects of a computer-based vocational system titled the Educational and Career Exploration System (ECES) on the

vocational maturity of tenth grade students. Using the Career Maturity Inventory as a pre- and posttest, they found that students who used ECES showed significantly larger gains in (1) degree of planfulness and (2) knowledge and use of resources for career exploration than nonusers. The degree of gain was related to the amount of time spent on ECES.

Rayman, Bryson, and Bowlesby (1978) studied the effects of the DISCOVER computer-assisted career guidance program on the career development of 96 students in grades seven through twelve. While both the students and their parents expressed considerable support for the value of DISCOVER, career development as measured by the Career Development Inventory and Assessment of Career Development was not significantly increased in comparison to control subjects. A second study by Savin (1979) confirmed that students liked DISCOVER and found it helpful. However, no standardized measures of career development were taken.

Devine (1977) studied the effects of the System of Interactive Guidance and Information (SIGI) on the career maturity of 84 students enrolled in a career development course and found no significant differences between treatment and control subjects. However, Pyle and Stripling (1976), studying a similar group of subjects, combined SIGI with individual counseling and found that subjects showed a significant increase in career maturity as measured by the Attitude Scale of the Career Maturity Inventory. Similar

studies by Melhus (1971) and Myers, Thompson, Lindeman, Super, Patrick, and Friel (1972) support the efficacy of combining computer-based interventions with other types of career guidance interventions.

Parent Involvement

Another relatively new development in career guidance is the direct involvement of parents in the counseling process. Counselors have traditionally tried to involve parents by providing information on a one-time basis through such means as booklets, special presentations (i.e. college nights, career days), or parent conferences (Amatea & Cross, 1980). Recently, new career guidance activities have been designed to directly involve parents in career counseling programs for their children.

Lea (1976) described a parent workshop designed to provoke thought and stimulate discussion between young people and their parents. The workshop participants were 18 parents whose children were already involved in a career counseling program at school. Parents were asked to take Holland's Vocational Preference Inventory (VPI) and to predict how their children would respond to the same inventory. Additionally, Holland's theory of vocational choice was explained and a profile of their children's VPI results was presented and explained. A follow-up survey indicated that the workshop caused parents to think more about their

children's career development and talk with their children about career planning.

Amatea and Cross (1980) developed a career guidance program entitled GOING PLACES. This program was designed for group presentation to high school students and their parents. The program consisted of six two-hour sessions covering six central components of career planning:

(1) compiling self-information, (2) exploring occupations, (3) developing information-getting strategies, (4) relating self-information to career alternatives, (5) exploring educational training options, and (6) developing skills in decision making and goal setting. Anecdotal data indicated that both students and parents like the format and content of GOING PLACES. They also judged the program to be helpful to the students' career planning.

The studies by Lea (1976) and Amatea and Cross (1980) lack evidence that the programs had any direct benefit for students' career development. However, the perceptions that both parents and students felt these programs were helpful indicated that evaluative research on such programs would be worthwhile.

One frequently used career guidance intervention not discussed thus far is career guidance testing programs. Career guidance tests were first developed and used in the 1920s (Chauncey & Dobbin, 1966) and are still used extensively in guidance programs throughout the United States (Engen, Lamb, & Prediger, 1982). Due to their importance in

this study, the most frequently used career guidance tests will be discussed in the following section of this review.

The Use of Tests in Career Guidance

Thorndike and Hagen (1969) divided the history of individual assessment into four parts covering the years 1900 to 1960. They described the period from 1900 to 1915 as the "pioneering phase." During this phase the first practical and widely used methods of assessing abilities were developed. For example, Binet's test, designed to screen French school children for appropriate educational placement, was the first wide-scale use of aptitude testing.

The years from 1915 to 1930 were classified as the "boom years" for testing development. During this period the development and expansion of testing proceeded at a rapid rate. Lewis Terman standardized and validated the Binet test for use in this country. World War I prompted the development of the Army Alpha test, the first group-administered test of intelligence. The use of the Army Alpha test to place personnel into appropriate jobs within the military also marked the first wide-scale use of tests as occupational guidance tools (Chauncey & Dobbin, 1966). This period also saw the development of the first specific ability aptitude test, first achievement test, first personality inventory, and first interest inventory. The development of the Strong Vocational Interest Blank (SVIB) in 1927 held particular significance for career guidance. The SVIB

was followed shortly by another inventory of interests related to occupations, the Kuder Preference Record, in 1934 (Shertzer & Linden, 1979).

Thorndike and Hagen (1969) referred to the years from 1930 to 1945 as a "time of critical appraisal." During this period the emphasis shifted from measuring a limited range of abilities to evaluating the entire range of educational objectives. During this period Wechsler's individual intelligence scale was published, Buros published the first Mental Measurement Yearbook, and the Minnesota Multiphasic Personality Inventory was developed.

The fourth phase, from 1945 to 1960, was described as a "period of test batteries and testing programs." Integrated test batteries and wide-scale testing programs were developed and expanded. The sudden influx of millions of service men into the job market following World War II led to the development of the General Aptitude Test Battery (GATB) as a tool for vocational counseling. The 1950s saw the advent of electronic test processing which made the use of tests easier and more economical (Shertzer & Linden, 1979).

Shertzer and Linden (1979) noted that the period since 1960 has been one of controversy. Questions have been raised regarding the ethics of using tests as well as their utility for facilitating the counseling process. During the 1970's several major educational organizations called for a reconsideration of the use of standardized tests, and the National Education Association went so far as to resolve

that all group standardized intelligence, aptitude, and achievement tests should be eliminated (Engen et al., 1982).

In spite of the controversies surrounding testing, career guidance testing has continued to flourish (Engen et al., 1982). During the 1970s several new types of career guidance instruments were developed. Miller (1982) classified these new types of instruments into career maturity inventories, multidimensional instruments, and large-scale assessment procedures. Career maturity inventories and large-scale assessment programs have been primarily used to gather data for diagnostic and evaluative purposes related to career guidance and career education. The multidimensional instruments, however, have been used as a part of the career guidance and counseling process. These instruments can measure a variety of personal characteristics related to career options and provide integrated score reports that make test interpretation easier and more useful.

A recent survey revealed that career guidance tests are used in public and private secondary schools more than any other type of test (Engen et al., 1982). Those tests listed as most used by respondents to the survey can be classified as interest inventories, aptitude tests, or multidimensional tests.

Interest Inventories

The Strong-Campbell Interest Inventory (SCII) is the latest version of the interest inventory first published in 1927 as the Strong Vocational Interest Blank (SVIB). The several versions of the SVIB have a long, respected history. Millions of copies of the SVIB have been sold and thousands of studies have been conducted using the SVIB (Shertzer & Linden, 1979).

The SVIB and SCII are criterion references tests which compare individuals' scores to response patterns of various criterion groups. The SVIB and SCII contain occupational scales which are free of item overlap and use standard t scores (mean 50; standard deviation, 10).

The original and revised forms of the SVIB had separate versions for men and women. The 1966 edition consists of 325 items divided into 8 categories: occupations, school subjects, amusements, activities, types of people, order of preference of activities, preferences between two items, and abilities and characteristics. Most items call for a response of like, dislike, or indifferent to. Three hundred of the items on the 1966 edition of the SVIB came directly from the 1938 edition, with only minor rewording to lower the required reading level. The test has 54 occupational and five nonoccupational scales empirically derived through Strong's scale construction strategy. In addition, there are 22 nationally derived general occupational scales.

Original normative data were reanalyzed to obtain normative data for the 1966 SVIB (Shertzer & Linden, 1979).

Because males and females in the same occupation demonstrate different interest patterns, the SVIB had versions for men (blue manual) and women (pink manual). These different versions led to charges of sex bias on the SVIB and prompted the development of the SCII (Srebalus, Marinelli, & Messing, 1982).

The SCII uses the same version (white manual) for both men and women. In addition to eliminating separate tests for men and women, the SCII has also integrated Holland's theory of career development with the empirical approach traditionally used for scoring and interpreting the SVIB. The SCII has 325 items, most of which were abstracted from both the men's and women's editions of the SVIB. All items have been purged of sexist references, and some items were reworded to make them less ambiguous or easier to read. Only two entirely new items were written for the SCII (Shertzer & Linden, 1979).

The 1981 version of the SCII has three different types of scales arranged in a hierarchical order. The 6 General Occupational Themes Scales correspond to the six types in Holland's theory. There are 23 Basic Interest Area Scales designed to assess pure interest areas developed from the intercorrelation of inventory items. The SCII contains 162 empirically developed Occupational Scales. These scales are used to compare an individual's response to the entire

inventory to the response patterns of criterion groups representing each occupational area. These Occupational Scales are considered to be the most important and reliable scales on the SCII. Median test-retest reliability coefficients of .88 have been reported for a thirty-day interval (Campbell, 1974). The Theme Scales and Basic Interest Area Scales are useful in interpreting the Occupational Scales (Srebalus et al., 1982).

The SCII is easily administered, requiring only about 30 minutes, but the scoring procedures are complicated and require machine scoring. While the profile reports for both sexes have been merged into one form, the sex of the norm samples and sex of the respondents are still utilized in the scoring procedures. However, scores on all profiles are presented in such a manner that individuals can compare their scores with both male and female criterion groups (Campbell, Crichton, Hansen, & Webber, 1974).

The SCII is appropriate for individuals 16 and over (Buros, 1978). One problem with the SCII for general use in secondary schools is that it is most appropriate for college bound students and may therefore be of little value to the majority of senior high school students (Shertzer & Linden, 1979; Srebalus et al., 1982). The SCII is also still open to criticism for its use of cross-gender scoring. In spite of these shortcomings, however, the SCII has been hailed as the best in the long line of Strong interest inventories and, as Engen et al. (1982) have found, remains one of the

most popular interest inventories in use in secondary schools today.

There is limited research on the effectiveness of the SCII for facilitating career development. Cooper (1976) compared the SCII with two other counseling modes and found no evidence that it significantly affected career salience or consideration of nontraditional careers among women. Additionally, the SCII was found to be less efficient than a card sorting technique for promoting career exploration. Rubenstein (1978) investigated the effects of various interpretation modes with the SCII. The SCII was found to be effective in facilitating clients' degree of vocational certainty and self-knowledge of vocational interests. In a similar study, Hoffman, Spokane, and Magoon (1981) found that individual interpretation of the SCII significantly increased the amount of career information requests by clients.

The Kuder Preference Records date back to 1932 and are the most popular interest inventories in use today (Engen et al., 1982; Shertzer & Linden, 1979). Form C, the Kuder Preference Record-Vocational (KPR-V) was specifically designed for the guidance of students in school. Unlike Strong's empirically derived interest inventories, the KPR-V was designed through a rational approach to test construction. Rather than using an empirical approach to determine the appropriate items, Kuder selected items on the basis of homogeneity. That is, he selected items which appeared to

measure a particular interest, were alike in content, and were significantly intercorrelated.

The KPR-V has 100 items grouped into 10 scales: mechanical, computational, scientific, persuasive, artistic, literacy, musical, social service, clerical, and outdoor. An eleventh scale called verification is designed to detect faking or insincere answers by individuals taking the test. The KPR-V, like other Kuder inventories, uses a three-item, forced-choice format. Such a format calls for ipsative scoring and allows for intraindividual comparisons of interests. While such a scoring format enables users to compare the relative degree of interest in various occupations, difficulties arise when normative interpretations are used with ipsative scoring (Shertzer & Linden, 1979).

The KPR-V has been criticized primarily because of its scoring method. Normative data has been characterized as incomplete (Froelich, 1959) and the interpretation of a rationally derived and ipsatively scored test are difficult (Pierce-Jones, 1959; Shertzer & Linden, 1979).

In the Kuder Occupational Interest Survey (KOIS), Kuder abandoned the rational approach to test construction and adopted an empirical method. The KOIS has 157 empirically developed scales. For men, 79 occupational scores and 20 college major scores are reported. Women's reports include 56 occupational and 25 college major scores. Test-retest reliability coefficients for the scales range from

.77 to .91 with college students over a thirty day period. Correlation coefficients for high school subjects showed a range of .61 to .90 over a thirty day period. A study by Zytowski (1972) indicated that the validity of the KOIS was comparable to that of the SVIB.

All forms of the Kuder inventories are easily administered. Estimated time for completing the forms is approximately 30-45 minutes. Some forms may be scored by hand, but hand scoring is tedious and machine scoring is generally recommended. Even though brochures which accompany scoring reports are intended to aid self interpretation, the difficulty of accurate interpretation probably precludes useful self interpretation by most examinees (Shertzer & Linden, 1979).

The Ohio Vocational Interest Survey (OVIS) was designed to be used by students in grades 8 through 12. The OVIS consists of two parts: the Student Information Questionnaire and the Interest Inventory. The Student Information Questionnaire lists twenty-seven kinds of job activities and gathers information about students' favorite school subjects, high school program, and educational plans after high school. The Interest Inventory lists 280 job activities which are categorized into 24 scales that cover more than 21,000 jobs in the Dictionary of Occupation Titles. Subjects respond to each item on a Lickert-type scale ranging from like very much to dislike very much. The scoring

system provides norms for comparing an individual's interests to those of other students (Shertzer & Linden, 1979).

The OVIS was designed to be compatible with other career guidance tools including the Occupational Outlook Handbook, the General Aptitude Test Battery, and the Dictionary of Occupational Titles. It has been normed on 50,000 high school students throughout the country. The reliability of the scales varies, but the median test-retest correlation coefficient is .80 over a two-week period. The OVIS is untimed and requires from 60 to 90 minutes to administer (Srebalus et al., 1982).

The Self-Directed Search (SDS) is, as its name implies, a self-administered, self-scored, guidance tool based upon Holland's career development theory. While the directions encourage users of the SDS to contact a counselor, Holland (1972) believes that the SDS can be highly useful even without the involvement of a trained counselor or psychometrist.

The SDS booklet guides the user through a series of activities related to occupational daydreams, preference for activities, competencies, preferences for occupations, and estimates of the subject's abilities in a variety of occupational areas. By working through the booklet, the user generates a three letter code based upon the six personality types described in Holland's theory. Then, by using an accompanying booklet called The Occupation Finder, the user

is led to investigate several occupations compatible with his code.

The SDS has been praised for its clear and easily understood directions, its efficiency, and its thoughtful construction (Brown, 1978; Seligman, 1974). However, Crites (1978b) has criticized the SDS as being too simplistic, subject to scoring errors, and prone to seriously mislead naive users. Crites (1978b) has even questioned the ethics of making the SDS readily available to untrained users.

Considering its recency compared to such inventories as the SCII and the KOIS, the SDS has generated a good deal of research regarding its effects on career development. Nolan (1974) compared the SDS to traditional group vocational counseling and found the SDS to be less effective in promoting frequency of information seeking behaviors. However, a similar study by Avallone (1974) found the SDS to be as effective as group counseling in facilitating generation of career alternatives, vocational exploration, and information seeking activities, and satisfaction with career choice. Krivatsky and Magoon (1976) have also found the SDS to be as effective as traditional group counseling for promoting information seeking activities among high school students.

Zener and Schneulle (1976) compared the effects of the SDS with the Vocational Preference Inventory (VPI) on the career development of high school students. They found that both the SDS and the VPI were effective in facilitating

satisfaction with occupational choice and consideration of occupational alternatives. Students taking the SDS selected occupations more consistent with their personality types. Takai and Holland (1979) have also found that the SDS compares favorably with other counseling techniques for promoting an increase in information seeking behavior as well as an increase in the number and variety of occupations being considered.

Aptitude Tests

The Armed Services Vocational Aptitude Battery (ASVAB) is by far the most widely used career guidance test in secondary schools. The popularity of the ASVAB probably owes more to the fact that it is administered, scored, and interpreted at no cost by the armed services than to the merits of the test itself (Engen et al., 1982).

The ASVAB consists of 295 items divided into twelve tests: general information, numerical operations, attention to detail, word knowledge, arithmetic reasoning, space perception, mathematical knowledge, electronic information, mechanical comprehension, general science, shop information, and automotive information. The twelve tests are used to yield aptitude scores on six areas: electronic/electrical, communications, general technical, motor/mechanical, and general mechanical (Cronbach, 1979).

The ASVAB has been criticized both for its psychometric properties (Cronbach, 1979; Shertzer & Linden, 1979) and the way in which it is used by the armed forces recruiters (Conrad, Gulick, & Kincaid, 1977). Because it is often part of a school's career guidance program, Cronbach (1979) and Ciborowski (1980) recommend that school counselors monitor the use of the ASVAB closely.

The General Aptitude Test Battery (GATB) was developed in 1947 by the United States Employment Service and is intended for use in counseling and placement services with clients 16 years and older. Unlike the ASVAB, the GATB has tests that require more than paper and pencil performance, and is intended to be administered in individual or small group settings. Administration time is two and one-half hours (Herr & Cramer, 1979).

The GATB uses ten tests to assess nine aptitudes: general ability, verbal, numerical, and spatial abilities, clerical ability, form perception, motor coordination, and manual and finger dexterity. The GATB uses multiple cut-off scores to determine if an individual qualifies for an occupation or group of occupations. Within recent years, however, the use of cut-off scores has declined (Srebalus et al., 1982).

The GATB norms were initially derived from 519 employed workers. Since that time, 4000 additional workers between the ages of 18 and 54 have been tested as a normative population (Shertzer & Linden, 1982). The GATB has been

praised as the best validated multiple aptitude battery available. However, it has also been criticized for its use of cut-off scores as a criterion measure (Srebalus et al., 1982).

Multidimensional Tests

The Differential Aptitude Test (DAT) has long enjoyed a reputation of being the best multi-aptitude test battery available for use with high school students (Johnson, 1978). In 1972, the Psychological Corporation substantially augmented the DAT by adding the Career Planning Questionnaire (CPQ) as an available option. The CPQ and a revised score reporting system which included a narrative section were combined with the DAT to produce the DAT Career Planning Program (DAT-CPP) (Psychological Corporation, 1982), one of the first multidimensional career guidance tests available (Johnson, 1978).

The DAT was first published in 1946 and has since gone through several revisions, the latest in 1982. The uses of the DAT, according to the Administrator's handbook (Psychological Corporation, 1982) "fall into two general categories: counseling with individuals and making administrative decisions" (p. 13). In counseling, the DAT provides information to better understand the client and thereby aid clinical judgements. Administratively, the DAT is purported to be helpful in making decisions about what courses should be offered and who should take them. The battery consists

of eight tests which require 4 hours and 15 minutes for administration over two or more sessions. Because the DAT-CPP is crucial for this study, it seems worthwhile to briefly describe each of these tests.

(1) Verbal Reasoning (VR): The VR test is designed to measure the ability to understand concepts framed in words. It claims to test a student's ability to think constructively, manipulate abstract ideas, and reason using language. The 50 items on this test are double-ended analogies in which the first and last words are missing. The examinee is required to choose from five pairs of words the one pair that best completes the analogy.

(2) Numerical Ability (NA): The 40 items on the NA test are designed to measure the ability to understand numerical relationships and the facility for numerical reasoning. All items are presented in a computational format to reduce the language elements in this test. However, the publishers claim that the measurement of reasoning ability is not sacrificed by the computational format.

(3) Abstract Reasoning (AR): The AR test consists of 40 items designed to test reasoning ability unrelated to language usage. Items on this test present a series of diagrams which require the examinee to understand the principles of change that are represented in the diagram. The examinee indicates this understanding by selecting the diagram that should logically follow in the series.

(4) Clerical Speed and Accuracy (CSA): The 100 items in the CSA test are designed to measure speed and accuracy of perception, momentary retention, and response. The examinee is required to examine a combination of letters and numbers in the test booklet and then select the same combination from a group of similar combinations on the answer sheet. The items are supposed to resemble tasks that are similar to many tasks found in clerical jobs.

(5) Mechanical Reasoning (MR): The MR test consists of 100 items designed to assess the principles of operation and repair of complex mechanical devices. The test consists of pictures of mechanical situations with corresponding questions which test the degree to which the examinee understands what is happening in the picture. While the authors admit that this test may be affected to some degree by prior experience, they argue that scores will not be affected to such a degree that serious difficulties in interpretation result.

(6) Space Relations (SR): The SR test is designed to measure the ability to mentally manipulate concrete materials through visualization. The 60 items on this test require the examinee to mentally construct an object from a pattern and to identify that object in a rotated position.

(7) Spelling (S): The S test is a straightforward presentation of 90 words, some of which are incorrectly spelled, which were carefully selected based upon their common usage in everyday vocabulary and their discriminatory

value. Examinee's are required to indicate whether each word is spelled correctly or incorrectly as shown.

(8) Language Usage (LU): The LU test is designed to measure the ability to detect common grammatical errors, i.e. grammar, punctuation, and capitalization. The LU test consists of 50 short sentences divided into four parts. The examinee indicates which part, if any, contains a grammatical error. (Psychological Corporation, Harcourt Brace Jovanovich, 1982)

The Career Planning Questionnaire (CPQ) is designed to be administered and scored only in conjunction with the DAT. When the CPQ is used, a special answer folder is required along with a Career Planning Glossary. The Career Planning Glossary provides definitions of terms used in the CPQ (The Psychological Corporation, Harcourt Brace Jovanovich, 1982).

The CPQ is actually contained in the answer folder of the DAT. The CPQ is untimed and contains a 92 item interest survey based on school subjects and a 100 item interest survey based on occupational preferences. The two surveys are essentially checklists which are used to help students identify their top three choices in educational and occupational interests. The CPQ has been severely criticized for lack of data regarding either the reliability or validity of the instrument (Strong, 1978).

Results from the DAT and CPQ are reported on the DAT Career Planning Report (CPR). The CPR is printed on a single page and divided into two parts. In the first part,

scores from the DAT are reported in national percentile ranks. The percentiles, based upon same sex comparisons, are presented in numerical form and a graph form which incorporates the error measure of the tests. Percentile rankings for opposite sex are also presented numerically. Accompanying the percentile rankings is a concise explanation of percentile scores and how they can be used to determine performance on the test.

The second half of the CPR is a narrative report which integrates students' performance on the DAT and information gathered through the CPQ. The narrative report explains the degree of congruence between students' interests, educational plans, and aptitudes as measured by the CPQ and DAT. Where interests, plans, and aptitudes match, the narrative report confirms the match. When there is some disparity between interests, plans, and abilities, the report points out the differences and suggests some possible occupational alternatives for the student to explore. The CPR ends with a standard statement referring students to other sources for help in career planning.

The Differential Aptitude Test-Career Planning Program (DAT-CPP) has been commended for its innovative use of a narrative report and for incorporating the DAT into a comprehensive career planning program (Johnson, 1978). However, critics have also claimed that there is inadequate evidence for the validity of the CPQ or the computer

generated narrative reports that are used in the DAT-CPP (Johnson, 1978; Strong, 1978).

There is little research on the effectiveness of the DAT-CPP for promoting career development. Moni (1979) studied the effects of various modes of presentation of a career guidance unit built around the DAT-CPP. Moni (1979) found that students who participated in the guidance unit in adult-led small groups did significantly increase their career exploratory behaviors. However, because a great deal of information unrelated to the DAT-CPP results was presented in the guidance units, it is impossible to determine whether or not the DAT-CPP was responsible for this increase in exploratory behavior.

The ACT Career Planning Program, Level I (American College Testing Program, 1974a) was first published in 1974. The purpose of the ACT Career Planning Program (ACT-CPP), according to the Supervisor's Manual of Instructions (American College Testing Program, 1974b), is to "stimulate and facilitate self and career exploration, particularly the exploration of self in relation to careers" (p. 1). The most recent edition of the ACT-CPP (American College Testing Program, 1983) has the inventories divided into 10 units. The first five units are untimed.

Unit 1 is titled Background and Plans. In this unit, students answer 11 questions which provide a self-evaluation of (1) educational and career plans, (2) reading, writing,

math and study skills, and (3) ability to make appropriate course selections.

Unit 2 of the ACT-CPP is titled Work Related Experiences. This unit has 80 items which require students to estimate how often they have worked at a specific activity.

Unit 3, Self Rating of Abilities, requires students to estimate their abilities in nine areas. The areas are (1) scientific, (2) creative/artistic, (3) creative/literary, (4) helping others, (5) meeting people, (6) sales, (7) leadership/management, (8) organization, and (9) manual dexterity. Students rate themselves as high, medium, or low on each of these areas as compared with other persons their own age.

Unit 4, the ACT Interest Inventory, contains 90 items. Students indicate their interest in 90 activities by responding with like, indifferent, or dislike to each item.

The last six units of the ACT-CPP are timed ability measures which can be administered according to a variety of schedules covering one to three sessions. Total time for administering the ability measures in a single session is 91 minutes. The ability measures consist of six tests designed to measure a variety of aptitudes. Other than the titles, there is no explanation of what each test is designed to measure. A brief description of the ability measures may help the reader draw conclusions about the purpose of each test.

(5) Reading Skills (RS): The RS test contains five reading passages and accompanying questions. The 40 items contained in this section of the test are designed to test reading comprehension.

(6) Language Usage (LU): This LU test is similar in format to the Language Usage test of the DAT. Twelve sentences are presented, each having four parts underlined. Examinees are asked to examine each underlined part of the sentence and indicate whether it is correct or incorrect.

(7) Clerical Speed/Accuracy (CS): This test, though having a similar title, is completely different from the Clerical Speed and Accuracy test in the DAT. This CS test has 35 items which require the examinee to cross reference three different tables to determine the cost of shipping items of various weights to different locations. No math computational skills are required.

(8) Space Relations (SR): The SR presents a series of complex arrangements of identically sized and shaped blocks. Examinees are asked to study each arrangement and determine how many other blocks a designated block is touching. There are 40 items on this test.

(9) Numerical Skills (NS): The NS test contains 25 items. The first 12 items require computational skills only. The remaining 13 items are word problems and require reading, reasoning, and computational skills.

(10) Mechanical Reasoning (MR): The MR test is very similar to the test of the same name on the DAT. The MR

test has 35 items which require the examinee to study a picture of a common mechanical operation and determine what is happening in the picture.

Results from the 10 units are presented in the Career Planning Report. The Career Planning Report is divided into four sections: (1) How to Use Your Report, (2) Job Clusters, (3) Information for Counselors and Advisors, and (4) Another Way to Find Job Possibilities. The How to Use Your Report section is a step-by-step guide to interpreting and using the Career Planning Report. The Job Clusters section related students' interests and abilities to six career clusters and 23 job families. The Information for Counselors and Advisors section shows a graphic representation of students' percentile scores on seven ability and six interest measures. One of the ability measures is a composite score of reading skills, numerical skills, and language usage. Additionally, this section of the Career Planning Report directs students to specific areas of a World-of-Work Map contained in the Another Way to Find Job Possibilities section. The World-of-Work Map helps students select specific job families organized according to a data, people, ideas, and things typology.

An innovative feature of the ACT-CPP is the 23 page consumable booklet, "Exploring Your Future" (American College Testing Program, 1983), which is provided for each student. This booklet is designed to be used in conjunction with the Career Planning Report. The booklet contains

information on career planning steps, books on jobs and education, educational/training programs, job family charts, and advice on understanding and using the Career Planning Report.

The ACT-CPP was normed using a multistage probability sample of over 2,000 high school students from 201 high schools in 33 states. Interval reliability coefficients range from .77 to .91 on the ability measures, from .81 to .92 for the interest scales, and from .71 to .89 for the experience scales. Test-retest reliability coefficients over a nine-week period ranged from .59 to .87 on the ability measures, from .70 to .85 on the interest measures, and from .70 to .87 on the experience measures (American College Testing Program, 1974b).

Validity of the ACT-CPP scores has been tested in several ways. Correlations between overall grade point average and composite scores of the ability measures yielded a .64 coefficient for criterion-related validity. Construct validity is shown through intercorrelation of the ACT-CPP measures with other measures. The interest scales of the ACT-CPP were found to correlate from .35 to .62 with similarly named scales of the Vocational Preference Inventory and from .29 to .70 with scales from the Ohio Vocational Interest Survey. The ability measures yielded coefficients ranging from .46 to .80 when correlated to similarly named measures on the DAT (American College Testing Program, 1974b).

The ACT-CPP has been commended for the format of the program, its norming procedures, and its comprehensiveness. However, support for the reliability and validity of various tests in the ACT-CPP has been questioned. In addition there is a lack of research evidence that the ACT-CPP has any effect on the career development of students (Mehrens, 1977).

The long history of career guidance tests has resulted in little research concerning the effectiveness of such tests for facilitating career development. Despite the growing belief of some authors that tests must do more than simply provide students with worthwhile information (Prediger and Ferguson, 1982), most research on career guidance tests is still directed toward verifying the reliability and validity of such tests.

CHAPTER III

RESEARCH METHODOLOGY

Substantial time and expense is invested in career guidance testing in secondary schools. More research is needed to determine the effects of career guidance testing programs on career development. This study investigated the effects of career guidance testing programs on tenth grade high school students' career exploration behavior, career self-awareness, and career maturity.

Research Design

This study used a three-group, posttest-only design. The three experimental conditions consisted of (1) participation in the ACT Career Planning Program, (2) participation in the DAT Career Planning Program, and (3) participation in a three-session career guidance unit designed by the researcher. All students were posttested four weeks after participating in one of the experimental conditions.

To avoid disrupting normal school functioning, intact classroom groups were randomly selected for participation in the study. Students from these classes were then randomly assigned by sex to one of the experimental conditions.

The experimental design may be diagrammed as follows:

Group	Independent Variable	Posttest
<u>E1</u>	<u>X1</u>	<u>Y2</u>
E2	X2	Y2
E3	X3	Y2

Population

The population for this study consisted of tenth grade students in Alachua County Schools, Gainesville, Florida. All tenth grade students in Alachua County Public Schools routinely take part in career guidance testing as part of the county guidance program.

Alachua County is located in the north central part of Florida and has a population of approximately 159,000. Most of the county is considered rural. The only large population center is the city of Gainesville, which has a population of about 83,600. Gainesville is also the site of the University of Florida, the largest university in the state.

In 1983, the Alachua County School System served 21,741 students in grades kindergarten through twelve. Of these students, 15,898 attended schools in Gainesville. The remaining 5,843 students attended schools in the rural areas of the county.

The total number of tenth grade students in Alachua County at the time of this study was 1,751. There were approximately 817 (47%) females and 934 (53%) males. Of these, 513 (29%) were black and non-hispanic, 29 (2%) were hispanic, 1189 (68%) were white and non-hispanic, and 20 (1%) were of other national origins.

Sampling Procedures

The sample of students was drawn from two of the six public high schools. Buchholz High School and Santa Fe High School were chosen for the study because of their size and geographical location, and because they were considered representative of all the high schools.

Buchholz High School is located in the northwestern part of Gainesville. Built in 1971, it had in 1983 a total population of 1794 students in grades nine through twelve, most of whom were drawn from the west side of the city. The tenth grade class at Buchholz was comprised of 498 students of which 243 (49%) were female and 255 (51%) were male. Of these students, 107 (21%) were black and non-hispanic, 9 (2%) were hispanic, 376 (76%) were white and non-hispanic, and 6 (1%) were of other national origin. Most of the black students were bused from five to fifteen miles in order to achieve racial balance in the school.

Santa Fe High School was built in 1956 and is situated in an unincorporated area midway between the small cities of Alachua (population about 3985) and High Springs (population

about 2491). In 1983 the school served 838 students from the surrounding area. The tenth grade class at Santa Fe High School had 241 students, 102 (42%) of which were female and 139 (58%) of which were male. There were 71 (29%) black and non-hispanic, 2(1%) hispanic, 168 (70%) white and non-hispanic, and 0 (0%) of other national origin.

This study used students from six randomly selected English classes at each of the two high schools. English was selected as the curriculum area from which to draw the sample of students for two reasons. First, all tenth graders were required to take English. Therefore, high school counselors often used English classes for classroom guidance so that they could be assured of reaching every tenth grade student. This increased the external validity of the study because the setting was similar to that normally used for large group guidance activities. Secondly, tenth grade English classes were ability grouped according to achievement test scores and teacher recommendation. Therefore, these classes provided a convenient opportunity to examine the effects of academic achievement on career development.

This study used twelve intact English classes, with six classes each in the two participating schools. Sampling procedures called for the random selection of two classes from high achievement level, two classes from average achievement level, and two classes from low achievement level English classes at each high school. However,

Buchholz High School had only one low achievement level English class. Therefore, an additional average achievement level English class was substituted. The total sample then consisted of 96 students from four high achievement level classes, 118 students from five average achievement level classes, and 54 students from three low achievement level classes.

After the random selection of the twelve classes was completed, one third of the males and one third of the females from each of the twelve classes were randomly assigned to one of three experimental groups. Thus, it was assumed that students were equally distributed by achievement level and sex into the three experimental conditions.

The sampling procedure resulted in the selection of 268 students for inclusion in the study. However, due to circumstances beyond the experimenter's control, 83 students were eliminated from the study. Forty were eliminated due to absenteeism or withdrawal from school. Thirteen failed to complete all items on the criterion tests, and 30 did not have scores which could be used as a covariate.

Of the remaining 185 students, 58 were from high achievement, 90 were from average achievement, and 37 were from low achievement level English classes. There were 108 males and 77 females. Of these students, 46 were black and non-hispanic, 2 were hispanic, 135 were white and non-hispanic, and 2 were from other national origins.

Experimental Conditions

The experimental conditions consisted of participation in (1) the ACT Career Planning Program, (2) the DAT Career Planning Program, or (3) a career guidance unit designed by the researcher. All three experimental conditions required three sessions. Two of the sessions were on consecutive days and were followed in four weeks by the third session.

For Experimental Groups E1 and E2, the first two sessions were used for the administration of career guidance inventories. During session three, students in E1 and E2 had their scores from the career guidance inventories interpreted in large groups. Students in Experimental Group E3 participated in three large group career guidance sessions unrelated to the career guidance inventories.

Experimental conditions are presented below:

Experimental Conditions		
Group	Days 1 & 2 of Study	Day 30 of Study
E1	Career guidance testing (ACT)	Test interpretation
E2	Career guidance testing (DAT)	Test interpretation
E3	Two non-testing guidance activities	Third career guidance activity

Experimental Group 1

Experimental Group E1 participated in the ACT Career Planning Program, Level 1. This program consists of two inventories and supplemental career guidance materials. The inventories are: (1) The Inventory of Experiences, Plans, and Interests; and (2) Ability Measures. As the title implies, The Inventory of Experiences, Plans, and Interests is designed to measure students' activities, career and educational plans, and interests. The Ability Measures section is designed to measure students' aptitudes in reading skills, language usage, clerical skills, space relations, numerical skills, and mechanical reasoning. Total time required for administering both parts of the inventory is estimated to be 2 hours and 51 minutes.

Results from the Inventory of Experiences, Plans, and Interests and Ability Measures are combined to produce a report form which shows students' results on six ability scales, six interest scales, and six experience measures related to interests. Additionally, the report organizes the world of work into six job clusters (Business Contact, Business Operations, Technical, Science, Arts, and Social Service) and prioritizes students' career exploration alternatives around these six job clusters based upon ability and interest scores.

In addition to the inventories and score reports, the ACT Career Planning Program provides a variety of

supplemental materials for use by counselors and students. Counselors are provided with a 50 page booklet called the "Action Guide," which contains suggestions and instructions on how the ACT Career Planning Program may be used effectively by itself or as part of a comprehensive career guidance program. Additionally, counselors are provided with 13 pages of scripts and 27 pages of graphics which can be used to introduce the ACT Career Planning Program and interpret the score reports to groups of students. The script can be used exactly as it is written or can be adapted as desired by the counselor. The graphics are designed so that they can easily be made into transparencies and used as visual aids in presentations to students.

The ACT Career Planning Program also provides a 23 page workbook for students which can be used in conjunction with the score reports. This workbook is designed to help students use their score reports to further explore career information and their own abilities, interests, and plans. Instructions on the score reports refer students to specific pages in the workbooks. Activities in the workbook expand upon the information provided on the score report and refer students to sources such as the Dictionary of Occupational Titles or the Occupational Outlook Handbook.

In this study, score interpretations were done according to the script provided in the ACT Career Planning Program. The graphics were made into transparencies and used in conjunction with the script. The student workbooks

were passed out with the score reports and referred to as called for in the script. The interpretation session lasted approximately 50 minutes. Students were allowed to keep, and encouraged to use, their score reports and workbooks after the interpretation session was over.

Experimental Group 2

Experimental Group E2 participated in the DAT Career Planning Program, which consists of an orientation booklet, the Differential Aptitude Test (DAT), and the Career Planning Questionnaire (CPQ). The orientation booklet was given to students one week prior to taking the DAT and CPQ. The orientation booklet gives a description of the DAT Career Planning Program and explains how the tests and score reports can be used to facilitate career planning. The booklet also has a copy of the CPQ so that students will have time to consider their answers and discuss their career and educational plans with their parents.

The DAT is designed to measure students' aptitudes in verbal reasoning, numerical ability, abstract reasoning, clerical speed and accuracy, mechanical reasoning, space relations, spelling, and language usage. The CPQ is designed to measure students' interests, educational goals, and career goals. Total time required for administering the DAT and CPQ is estimated to be about 4 hours and 15 minutes.

Results from the DAT and CPQ are combined to produce the Career Planning Report (CPR). In addition to reporting

scores from the DAT, the Career Planning Report combines results from the DAT and CPQ into a narrative report which provides an analysis of how well a student's aptitudes, interests, and educational goals match his occupational plans. When personal goals and DAT results match, the Career Planning Report confirms the match. When personal goals and DAT results conflict, the Career Planning Report suggests some possible alternative goals for students.

Unlike the ACT Career Planning Program, the DAT Career Planning Program provides few supplemental materials for use by counselors and students. The counselor's guide provides only general instructions on how to interpret the DAT/CPQ Career Planning Report. A one page copy of the Career Planning Report is provided for conversion into an overhead transparency that can be used as a visual aid when making presentations to groups. In this study, the Career Planning Report was interpreted for students by referring them to a transparency which explained the meaning of each part of the score report. This method of interpretation was consistent with the instructions provided in the counselor's guide and took approximately 50 minutes in a large group session.

Experimental Group 3

Experimental Group E3 participated in three large group career guidance sessions designed by the experimenter as a control group. This experimental group did not receive any

career guidance testing. Session one focused on various education and training options available after high school. Students were encouraged to share their knowledge about on-the-job training, apprenticeship programs, vocational-technical programs, and college programs. The discussion primarily centered around the time and expense for each type of training.

The second session was used to facilitate discussion of students' career values. Students were asked to choose one of three selected jobs. Each job was assumed to have benefits which would be both attractive and unattractive to students. In order to make a choice, students had to examine their values on such job-related issues as salary, job security, and leisure time.

Session three required students to answer eight questions related to job type, work setting, and working conditions. Working in small groups, students read their answers aloud and listened while other students suggested jobs which might match their answers.

The sessions for Experimental E3 (See Appendix B) were limited guidance interventions intended primarily to control for any Hawthorn Effect (Kerlinger, 1973). The research assistants conducting these sessions were instructed not to volunteer information regarding education, careers, or career planning, but to facilitate discussion and sharing of educational and career goals and plans among students.

Criterion Instruments

Three instruments were used in this study: (1) the Career Maturity Inventory Attitude Scale, form A-2; (2) the Career Exploration Behavior Inventory; and (3) the Self-Appraisal Scale. They were administered to all students in the experimental conditions.

The Career Maturity Inventory Attitude Scale

Vocational maturity was measured by Crites' (1978a) Career Maturity Inventory Attitude Scale, form A-2 (CMIAS). The CMIAS consists of 50 items to which an individual responds true or false to denote agreement or disagreement with a statement. It measures several attitudes related to Vocational Maturity (VM). However, only one overall score is determined by the CMIAS. There are no sub-scales within this instrument.

Kerlinger (1973) defined an attitude as "an organized predisposition to think, feel, perceive, and behave toward a referent or cognitive object" (p. 495). This definition implies that one's attitude will affect behavior. Therefore, measurement of attitudes can be a measure of expected behavior.

As emphasized in Chapter II, vocational maturity gives attention to behaviors that can accomplish various vocational goals. Therefore, an attitude scale, according to Kerlinger (1973), can measure an individual's predisposition to behave in a certain way toward vocational tasks.

Crites (1978a) reported internal consistency coefficients for the CMIAS ranging from .73 to .75 for students in grades six through twelve. The coefficients were established using over 69,000 subjects. These internal consistency coefficients are comparable to other scales which are similar to the CMIAS (Crites, 1978a). In addition, because the CMIAS measures a group of related but distinct attitudes, it would not be expected that internal consistency would be as high as other scales which measure more homogeneous variables.

Crites (1978a) also reported high stability coefficients for the CMIAS. In subjects from grades six through twelve, tested and retested at one year intervals, a stability coefficient of .71 was found. Crites (1978a) also pointed out that the developmental nature of vocational maturity would naturally lead to changes in vocational attitudes over time. Therefore, the .71 correlation coefficient might have reflected increases in vocational maturity as well as error variance in the CMIAS.

There is evidence of content validity, criterion-related validity, and construct validity for the CMIAS. Hall (cited in Crites, 1978a) reported a study which tested the agreement between the empirical scoring key of the CMIAS and the opinions of 10 experts (five male and five female counseling psychologists) as to what constituted the more mature response to each item on the scale. Hall reported a 74 percent agreement between the empirical scoring key and

the experts' judgments and this supported Crites' (1978a) claim of content validity for the CMIAS.

The CMIAS has been shown to correlate with several criterion variables. Bathory (1967), in a study using 79 ninth grade and 59 twelfth grade subjects, found correlation coefficients of .39 ($p < .01$) and .31 ($p < .05$) respectively with subjects' realism of aspirations as measured by the Occupational Aspiration Scale. In a similar study of 1648 students, grades 6 through 12, Hollender (cited in Crites, 1978a) found that students making more realistic career choices generally scored higher on the CMIAS. A study by Carek (cited in Crites, 1978a) indicated that certainty about career choice among college students correlated significantly ($p < .05$) with scores on the CMIAS. Because reality of aspirations and career certainty are both indices of vocational maturity (Super, 1969), these studies offer support for the criterion-related validity of the CMIAS.

Evidence for the construct validity of the CMIAS comes from its correlation with other variables. Theoretically, because vocational maturity is an important aspect of vocational behavior, it should be related to other intellectual and psychological variables. Research shows correlations between the CMIAS and measures of intelligence (Asbury, 1968), academic aptitude (Tamminen and Miller, 1968), and psychological variables (Bartlett, 1968; Hollender and Schalon, 1965). The significant correlations among scores on the CMIAS and these intellectual and

psychological variables provides evidence for the construct validity of the CMIAS.

The Career Exploratory Behavior Inventory

Career exploration behavior was measured by a modified version of the Career Exploratory Behavior Inventory (CEBI) developed by Moni (1979). The CEBI is a ten item survey which requires students to respond with either "Yes" or "No" to questions about their career exploration behavior over the previous two weeks (See Appendix B).

The CEBI was adapted from a structured interview approach developed by Krumboltz and Schroeder (1965), which was designed to measure the frequency and variety of subjects' information-seeking behavior. Zener and Schnuelle (1976) later modified the structured interview into a questionnaire requiring written responses. Variations of the instrument have been used by other authors (e.g. Cooper, 1976; Jones and Krumboltz, 1970; Krivatsky and Magoon, 1976) with satisfactory results. Oliver (1978) reported that researchers using the structured interview approach found it to be a highly valid technique based upon verification of self-reports of randomly selected subjects.

Self-Appraisal Scale

Career self-awareness was measured by the Self-Appraisal Scale (SAS), one of five subtests on the Career Maturity Inventory Competence Test (CMICT). The SAS is a 20

item scale designed to measure self-awareness of vocational assets and liabilities (Crites, 1978a).

The SAS is based on the assumption that individuals who can accurately appraise the career capabilities of others are also accurate self-appraisers. Each item on the SAS presents some career-related personal characteristics of a young person taken from actual case studies. The examinee is asked to make a judgment regarding career options and chooses one of five alternatives. These alternatives reflect the following concept: (1) dependence upon others, (2) a need for certainty, (3) overestimation of capabilities, (4) accurate self-appraisals, or (5) "don't know".

Evidence for the reliability and validity of the CMICT is limited. Crites (1978a) reports Kuder-Richardson formula 20 internal consistency coefficients for the SAS ranging from .73 to .85. Data on test-retest stability is apparently still being gathered by the author.

Although validation of the CMICT has just begun, Crites (1978a) claims that there is evidence of content, criterion-related, and construct validity. Content validity is based upon the item selection process, which used a method of trial tests and replications to select only items which differentiated significantly between grade levels in several independent samples of subjects. Crites (1978a) also claims that the relationship of items to grade level is evidence of criterion-related validity because it bears out the developmental nature of the career maturity process.

Construct validity is based upon Crites' (1978a) model of career maturity. The CMICT is designed to measure the Career Choice Competencies factor of this model. According to Crites (1978a), the variables which make up the Career Choice Competencies factor are interrelated, with hypothesized correlation coefficients ranging from .40s to .60s. Scores on the subtests of the CMICT have been found to correlate from .53 to .62. The similarity between hypothesized correlation coefficients and obtained correlation coefficients is evidence of the construct validity of the CMICT (Crites, 1978a).

Research Personnel

This study utilized 11 research assistants for conducting treatment groups and collecting data. Six assistants were involved in the administration and interpretation of the career planning programs to Experimental Group 1 and Experimental Group 2. All six were either certified school counselors or occupational/placement specialists with minimum training at the Masters level. They were experienced in administering standardized tests.

Of the five assistants facilitating the various guidance sessions for Experimental Group E3, one held a Ph.D. in Counselor Education, two were certified school counselors with Master's degrees, and two were school counselor practicum/intern students in the Counselor Education Department at the University of Florida.

* All posttesting was done by the researcher or occupational/placement specialist in the schools. All research assistants received instructions and training from the experimenter to assure consistency among the experimental groups.

Hypotheses

This study tested the following null hypotheses:

- Ho1: There is no significant difference among the experimental groups in career maturity, as measured by the Career Maturity Inventory Attitude Scale.
- Ho2: There is no significant difference among different English achievement level groups in career maturity, as measured by the Career Maturity Inventory Attitude Scale.
- Ho3: There is no significant difference among the experimental groups in career self-awareness, as measured by the Self-Appraisal Scale.
- Ho4: There is no significant difference among subjects from different English achievement level groups in career self-awareness, as measured by the Self-Appraisal Scale.
- Ho5: There is no significant difference among the experimental groups in career exploration behavior, as measured by the Career Exploratory Behavior Inventory.

Ho6: There is no significant difference among different English achievement level groups in career exploration behavior, as measured by the Career Exploratory Behavior Inventory.

Data Collection and Analysis

Exactly four weeks after the third treatment session, students were posttested in their regular English classrooms. All students were administered the Career Maturity Inventory Attitude Scale (CMIAS), the Career Exploratory Behavior Inventory (CEBI), and the Self-Appraisal Scale (SAS). Most students finished all three tests within the regular 50 minute class period. However, students in one of the low ability level English classes failed to complete all three measures in one period. Therefore, posttesting for that group was completed in their classroom on the following day.

Responses for the CMIAS and SAS were recorded by students on a standardized answer sheet which accompanies the Career Maturity Inventory. Answers to the CEBI were recorded directly on the forms. Responses for all three instruments were handscored and tallied by the researcher. Raw scores for all instruments were used for analysis.

This research gathered the following data from students: (1) a score of vocational maturity; (2) a score of career exploration behaviors; (3) a score of career

self-awareness; (4) students English ability level group; and (5) students' sex.

To evaluate the six null hypotheses for this study, as well as evaluate any differences by sex in vocational maturity, career exploration behavior, and career self-awareness, a 3 X 3 X 2 factorial two-way analysis of variance was computed. If the analysis yielded a significant F value, a multiple comparison was done to determine which variables (e.g. experimental conditions, English ability levels, sex, or interactions) yielded significantly different means for each dependent variable (i.e. vocational maturity, career exploration behavior, and career self-awareness). The multiple comparison formula used was the Bonferonni Procedure (Kerlinger, 1973). A confidence level of $p < .05$ was considered significant.

CHAPTER IV

DATA ANALYSIS

This study used a three-group posttest-only design to investigate the effects of three career guidance interventions on the career development of tenth grade students. The three experimental conditions consisted of (1) participation in the ACT Career Planning Program, (2) participation in the DAT Career Planning Program, and (3) participation in a three-session career guidance unit.

Posttesting was conducted two weeks after the students finished participating in one of the three experimental conditions. The dependent variables in this study were scores on (1) the Career Maturity Inventory Attitude Scale (CMIAS), (2) the Self-Appraisal Scale of the Career Maturity Inventory Competence Test (SAS), and (3) the Career Exploratory Behavior Inventory (CEBI). The analysis procedures and results are reported in this chapter.

Data Analysis

A 3 X 3 X 2 factorial two-way analysis of variance (3 X 3 X 2 ANOVA) was used to test the effects of treatment, ability level, and sex on each of the three dependent variables. When the 3 X 3 X 2 ANOVA yielded a significant F

value at the .05 level of confidence, the Bonferroni Procedure for multiple comparisons (Kerlinger, 1973) was used to determine the source of the effects.

Results

The mean scores and standard deviations for the Career Maturity Inventory Attitude Scale (CMIAS) are reported in Tables 1, 2, and 3. The mean scores and standard deviations for the Self-Assessment Scale of the Career Maturity Inventory (SAS) are reported in Tables 4, 5, and 6. The mean scores and standard deviations for the Career Exploratory Behavior Inventory (CEBI) are reported in Tables 7, 8, and 9.

The hypotheses in this study were concerned with differences on the dependent variables across experimental conditions and ability levels. The results of the analysis are organized according to the dependent variables.

The Career Maturity Inventory Attitude Scale (CMIAS)

The results of the 3 X 3 X 2 ANOVA for the CMIAS are reported in Table 10. Hypotheses 1 and 2 in this study focused on Career Maturity and the CMIAS.

Hol: There is no significant difference among the experimental groups in career maturity, as measured by the Career Maturity Inventory Attitude Scale.

Table 1. Means and Standard Deviations for the CMIAS by Experimental Group.

Group	N	Mean Score	Standard Deviation
E1	69	32.4638	4.6954
E2	58	31.7586	5.1310
E3	58	32.1552	6.1325

Table 2. Means and Standard Deviations for the CMIAS by Achievement Level.

Level	N	Mean Score	Standard Deviation
A1 (High)	58	34.1552	4.5799
A2 (Average)	90	32.7889	4.6167
A3 (Low)	37	27.4324	5.1990

Table 3. Means and Standard Deviations for the CMIAS by Sex.

Sex	N	Mean Score	Standard Deviation
Females	77	33.0000	5.1200
Males	108	31.5370	5.3572

Table 4. Means and Standard Deviations for the SAS by Experimental Group.

Group	N	Mean Score	Standard Deviation
E1	69	12.0145	4.2061
E2	58	11.6380	4.2661
E3	58	11.1034	4.4037

Table 5. Means and Standard Deviations for the SAS by Achievement Level.

Level	N	Mean Score	Standard Deviation
A1 (High)	58	13.6379	3.6978
A2 (Average)	90	12.1888	3.8392
A3 (Low)	37	7.0270	2.5548

Table 6. Means and Standard Deviations for the SAS by Sex.

Sex	N	Mean Score	Standard Deviation
Female	77	13.1299	3.5368
Male	108	10.5278	4.4480

Table 7. Means and Standard Deviations for the CEBI by Experimental Group.

Group	N	Mean Score	Standard Deviation
E1	69	3.7681	2.2761
E2	58	3.2759	1.9982
E3	58	3.3276	2.0638

Table 8. Means and Standard Deviations for the CEBI by Achievement Level.

Level	N	Mean Score	Standard Deviation
A1 (High)	58	2.5690	1.7583
A2 (Average)	90	3.8222	2.0421
A3 (Low)	37	4.0541	2.4375

Table 9. Means and Standard Deviations for the CEBI by Sex.

Sex	N	Mean Score	Standard Deviation
Female	77	3.6104	1.9342
Male	108	3.3796	2.2578

Table 10. Analysis of Variance for CMIAS

Source of Variation	df	Sum of Squares	F Value	Significance of F
Treatment	2	0.744	0.02	0.9835
Achievement	2	987.634	22.13	0.0001*
Sex	1	3.920	0.18	0.6757
Treatment x Achievement	4	125.196	1.40	0.2352
Treatment x Sex	2	15.320	0.34	0.7099
Achievement x Sex	2	94.092	2.11	0.1246
Treatment x Achievement x Sex	4	84.236	0.94	0.4401

*Sig. > .01.

The obtained F value of .02 for experimental conditions shown in Table 10 was not significant at the .05 level of confidence. Therefore Ho1 could not be rejected.

Ho2: There is no significant difference among different English achievement level groups in career maturity, as measured by the Career Maturity Inventory Attitude Scale.

The obtained F value of 22.13 for achievement levels shown in Table 10 was significant beyond the .05 level of confidence. Therefore, Ho2 was rejected and the Bonferroni Procedure was used to compare means scores among the three groups. In Table 11 it can be seen that students in achievement levels 1 (high) and 2 (average) had significantly higher mean scores on the CMIAS than students in achievement level 3 (low). There was no significant difference in mean scores on the CMIAS between achievement levels 1 and 2.

The Self-Appraisal Scale (SAS)

The results of the 3 X 3 X 2 ANOVA for scores on the SAS are shown in Table 12. Hypotheses 3 and 4 in this study focused on career self-awareness and the SAS.

Ho3: There is no significant difference among the experimental groups in career self-awareness, as measured by the Self-Appraisal Scale.

The obtained F value of .47 for experimental conditions shown in Table 12 was not significant at the .05 level of confidence. Therefore, Ho3 was not rejected.

Table 11. Bonferroni T Tests for Achievement Levels on the CMIAS.

Achievement Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
A1 - A2	-0.557	1.366	3.290
A1 - A3	4.319	6.723	9.126**
A2 - A3	3.126	5.356	7.587**

** Comparisons Significant at the .05 Level.
 A1 = High English Achievement Level Group.
 A2 = Average English Achievement Level Group.
 A3 = Low English Achievement Level Group.

Table 12. Analysis of Variance for SAS.

Source of Variation	df	Sum of Squares	F Value	Significance of F
Treatment	2	11.180	0.47	0.6253
Achievement	2	816.710	34.39	0.0001*
Sex	1	83.714	7.05	0.0087
Treatment x Achievement	4	44.070	0.93	0.4497
Treatment x Sex	2	42.944	1.81	0.1671
Achievement x Sex	2	9.691	0.41	0.6656
Treatment x Achievement x Sex	4	39.132	0.82	0.5116

* Sig. > .01.

Ho4: There is no significant difference among different English achievement level groups in career self-awareness, as measured by the Self-Appraisal Scale.

The obtained F value of 34.39 for achievement level, shown in Table 12, was significant at the .05 level of confidence. Therefore, Ho4 was rejected and the Bonferroni Procedure was used to compare mean scores among the three achievement level groups. The mean score for students in achievement level 1 (high) was higher than the mean scores for students in achievement levels 2 (average) and 3 (low), (See Table 13). Additionally, students in achievement level 2 had a significantly higher mean score than students in achievement level 3.

The Career Exploratory Behavior Inventory (CEBI)

Scores on the CEBI consisted of the total number of different career exploration behaviors reported by students. The data collected using the CEBI was not conducive to determining the frequency of those reported behaviors. Hypotheses 5 and 6 in this study focused on the CEBI.

Ho5: There is no significant difference among the experimental groups in career exploration behavior, as measured by the Career Exploratory Behavior Inventory.

The results of the 3 X 3 X 2 ANOVA for the CEBI are shown in Table 14. The obtained F value of 1.31 for

Table 13. Bonferroni T Tests for Achievement Levels on the SAS.

Achievement Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
A1 - A2	0.046	1.449	2.852**
A1 - A3	4.858	6.611	8.364**
A2 - A3	3.535	5.162	6.789**

** Comparisons Significant at the .05 Level.

A1 = High English Achievement Level Group.

A2 = Average English Achievement Level Group.

A3 = Low English Achievement Level Group.

Table 14. Analysis of Variance for CEBI.

Source of Variation	df	Sum of Squares	F Value	Significance of F
Treatment	2	10.834	1.31	0.2713
Achievement	2	64.828	7.87	0.0005
Sex	1	9.102	2.21	0.1391
Treatment x Achievement	4	23.272	1.41	0.2321
Treatment x Sex	2	0.267	0.03	0.9682
Achievement x Sex	2	14.209	1.72	0.1815
Treatment x Achievement x Sex	4	18.048	1.10	0.3608

experimental conditions was not significant at the .05 level of confidence. Therefore, Ho5 could not be rejected.

Ho6: There is no significant difference among different English achievement level groups in career exploration behavior, as measured by the Career Exploratory Behavior Inventory.

The obtained F value of 7.87 for achievement level shown in Table 14 was significant at the .05 level of confidence. Therefore, Ho6 was rejected and the Bonferroni Procedure was used to compare mean scores among the three achievement levels. The mean scores shown in Table 15, for achievement levels 2 (average) and 3 (low) were significantly higher than for achievement level 1 (high). There was no significant difference in the mean scores on the CEBI between achievement levels 2 and 3.

Other Findings

The 3 X 3 X 2 ANOVA also tested the differences between sex on each of the dependent variables. The results of the ANOVA for the CMIAS are reported in Table 10. The obtained F value of 0.18 for sex was not significant at the .05 level of confidence. Therefore, no significant difference in mean scores on the CMIAS between sexes was indicated.

The results of the 3 X 3 X 2 ANOVA for the SAS are reported in Table 12. The obtained F statistic of 7.05 was significant at the .05 level of confidence. The mean score

Table 15. Bonferroni T Tests for Achievement Levels on the CEBI.

Achievement Comparison	Simultaneous Lower Confidence Limit	Difference Between Means	Simultaneous Upper Confidence Limit
A3 - A2	-0.7268	0.2318	1.1905
A3 - A1	0.4523	1.4851	2.5179**
A2 - A1	0.4267	1.2533	2.0798**

** Comparisons Significant at the .05 Level.

A1 = High English Achievement Level Group.

A2 = Average English Achievement Level Group.

A3 = Low English Achievement Level Group.

for females on the SAS (13.1299) was significantly higher than the mean score for males (10.5278).

The results of the 3 X 3 X 2 ANOVA for the CEBI are shown in Table 14. The obtained F statistic of 2.21 for sex was not significant at the .05 level of confidence. Therefore, results indicated no significant difference between sexes in mean scores on the CEBI.

Previous research has indicated that achievement level is related to career maturity (Crites, 1978a). Therefore, it seemed appropriate to examine how English achievement levels of students in this study would relate to scores on the CMIAS, the SAS, and the CEBI. To further control for error variance due to achievement, a 3 X 3 X 2 factorial two-way analysis of covariance was conducted for each dependent variable. Language scores from the Metropolitan Achievement Test (MAT) were used as the covariate.

Preliminary analysis indicated that use of the MAT language score as a covariate was appropriate for the CMIAS and SAS. However analysis also showed that MAT language scores were not significantly related to scores on the CEBI and had unequal regression lines across experimental conditions, ability level, and sex groups. Therefore, due to a violation of one of the assumptions for analysis of covariance, the results of the 3 X 3 X 2 ANOVA for the CEBI were not valid and are not reported in this chapter.

Results for the 3 X 3 X 2 ANOVA for the CMIAS are reported in Table 16.

None of the obtained F values were significant at the .05 level of confidence. Therefore, no significant differences on the CMIAS among experimental conditions, English ability levels, or sexes were indicated.

Results from the 3 X 3 X 2 ANOVA for the SAS are reported in Table 17. None of the obtained F values were significant at the .05 level. Therefore, no significant differences on the SAS among experimental conditions, English ability levels, or sexes were indicated.

Limitations

When interpreting the results of this study, the following limitations need to be considered.

1. The two career guidance testing programs used in this study, the ACT Career Planning Program and the DAT Career Planning Program, were used as isolated career guidance interventions rather than as part of a comprehensive career guidance program. Their effectiveness in facilitating career development may have been limited because of the traditional way in which they were used.
2. The sampling procedure used in this study was limited. First, intact English classes were randomly selected for inclusion in the study. Students from these classes were then randomly

Table 16. Analysis of Variance for CMIAS.

Source of Variation	df	Sum of Squares	F Value	Significance of F
Main Effects				
Covariate	1	189.880	8.91	0.0033
Treatment	2	5.785	0.14	0.8731
Achievement	2	115.061	2.70	0.0701
Sex	1	0.353	0.02	0.8977

Table 17. Analysis of Variance for SAS.

Source of Variation	df	Sum of Squares	F Value	Significance of F
Main Effects				
Covariate	1	304.643	30.14	0.0001
Treatment	2	28.595	1.41	0.2460
Achievement	2	44.174	2.18	0.1157
Sex	1	33.350	3.30	0.0711

assigned to experimental conditions. It is possible that students in these classes were not representative of the entire population of tenth grade students.

3. Some students were unable to estimate the frequency of their career exploration behaviors on the Career Exploratory Behavior Inventory. The data used to determine career exploration behavior depended upon the number of different behaviors that students reported.
4. The Self-Assessment Scale of the Career Maturity Inventory Competence Test (SAS) does not directly measure students' perceptions of their own career self-awareness. The SAS is based upon the assumption that students with adequate career related self-knowledge can make accurate assessments regarding the career potential of others. Therefore, none of the questions on the SAS directly assesses students' own career self-awareness. It is possible that students' career self-awareness was facilitated in ways which were not adequately measured by the SAS.

Summary

A summary of the results of the study obtained through the 3 X 3 X 2 ANOVA analysis is given below. The summary is

organized according to results for each of the three dependent variables.

The Career Maturity Inventory Attitude Scale (CMIAS)

1. There was no significant difference among experimental groups in scores on the CMIAS.
2. There was a significant difference among English achievement level groups in scores on the CMIAS. Subjects in achievement levels 1 (high) and 2 (average) had significantly higher mean scores on the CMIAS than subjects in achievement level 3 (low). There was no significant difference in mean scores between achievement levels 1 and 2.
3. There was no significant difference between sexes in scores on the CMIAS.

The Self-Appraisal Scale (SAS)

1. There was no significant difference among experimental groups in scores on the SAS.
2. There was a significant difference among English achievement level groups in scores on the SAS. Students in achievement level 1 (high) had a significantly higher mean score on the SAS than students in achievement levels 2 (average) or 3 (low). The mean score for students in achievement level 2 was higher than achievement level 3.

3. Females had a significantly higher mean score on the SAS than males.

The Career Exploratory Behavior Inventory (CEBI)

1. There was no significant difference among experimental groups in scores on the CEBI.
2. There was a significant difference among English achievement level groups in CEBI scores. Students in achievement level 2 (average) and 3 (low) had significantly higher mean scores than students in achievement level 1 (high). There was no significant difference in CEBI scores between achievement groups 2 and 3.
3. There was no significant difference between sexes in scores on the CEBI.

The Analysis of Covariance

To further control for error variance due to achievement level, a 3 X 3 X 2 factorial analysis of covariance was computed for the CMIAS and the SAS. This analysis yielded no significant differences among experimental groups, English achievement level groups, or sexes for either the CMIAS or the SAS.

CHAPTER V
SUMMARY, CONCLUSIONS, IMPLICATIONS
AND RECOMMENDATIONS

Career guidance inventories are used in high schools more than any other type of standardized test (Engen et al., 1982). While their value for predicting success in specific occupations has been questioned (Goldman, 1972a), career guidance inventories have been defended for their potential to facilitate students' career development. Because of the expense and time involved in career guidance testing programs, there is a need to investigate their effectiveness in facilitating students' career development.

Summary

The purpose of this study was to investigate the effectiveness of career guidance testing programs for facilitating students' career development. The population consisted of tenth grade students in Alachua County, Florida. To obtain the sample for the study, tenth grade English classes were randomly selected from two high schools. Students from these classes were then randomly assigned to one of three experimental conditions based upon students' sex and English achievement level.

This study used a three-group, posttest-only design. The three experimental conditions consisted of participation in (1) the ACT Career Planning Program, (2) the DAT Career Planning Program, and (3) a brief unit on career guidance. Four weeks after participating in one of the experimental conditions, students were posttested to obtain measures of (1) career maturity, using the Career Maturity Inventory Attitude Scale (CMIAS); (2) career self-awareness, using the Self-Assessment Scale of the Career Maturity Inventory Competence Test (SAS); and, (3) career exploration, using the Career Exploratory Behavior Inventory (CEBI).

To determine the effects of experimental conditions, achievement level, and sex on career maturity, career self-awareness and career exploration, a 3 X 3 X 2 factorial two-way analysis of variance (3 X 3 X 2 ANOVA) was conducted for each of the dependent variables. When the 3 X 3 X 2 ANOVA yielded a significant F value, the Bonferroni Procedure was used to determine the location of significant differences among the groups. Students in achievement levels 1 (high) and 2 (average) scored significantly higher in career maturity than students in achievement level 3 (low). There was no difference in career maturity scores between achievement levels 1 and 2. There were no differences among experimental conditions or sexes in career maturity.

The 3 X 3 X 2 ANOVA for career self-awareness as measured by the SAS showed a significant difference among

English achievement level groups. Students in achievement level 1 (high) had higher scores on career self-awareness than students in achievement levels 2 (average) and 3 (low). Students in achievement level 2 scored higher in career self-awareness than students in achievement level 3. Additionally, females had significantly higher career self-awareness scores than males. There was no difference in career self-awareness among the three experimental conditions.

The 3 X 3 X 2 ANOVA for career exploration as measured by the CEBI showed a significant difference among English achievement level groups. Students in achievement levels 2 (average) and 3 (low) scored significantly higher in career exploration than students in achievement level 1 (high). There was no significant difference in career exploration scores between achievement levels 2 and 3. No significant differences in career exploration were found among the experimental conditions or sexes.

There was a concern that differences in achievement level across the experimental conditions may not have been completely controlled by the experimental design. A supplemental analysis using a 3 X 3 X 2 factorial two-way analysis of covariance (3 X 3 X 2 ANCOVA) was conducted using language achievement scores from the Metropolitan Achievement Test as a covariate. The 3 X 3 X 2 ANCOVA showed no significant differences among experimental conditions, achievement levels, or sexes for career maturity and career

self-awareness. The 3 X 3 X 2 ANOVA was determined to be inappropriate for career exploration.

This chapter discusses the results of the study. The remainder of the chapter will include (1) conclusions, (2) implications, and (3) recommendations.

Conclusions

This study investigated the effects of participation in (1) the ACT Career Planning Program, (2) the DAT Career Planning Program, and (3) a career guidance unit acting as a control group, on the career maturity, career self-awareness, and career exploration of tenth grade students. The conclusions drawn from the study will be organized with respect to each of the dependent variables.

Career Maturity

Career maturity refers to an individual's attained point in career development as compared to his peers. Higher scores in career maturity are assumed to indicate accelerated career development.

The results of this study indicate that there was no difference among the three experimental conditions in the facilitation of career maturity. More specifically, neither the ACT Career Planning Program nor the DAT Career Planning Program were found to be more effective than a brief career guidance unit for facilitating students' career maturity.

The results of this study offer further evidence that achievement level is significantly related to career maturity. Students with high or average English achievement scored significantly higher in career maturity than students with low English achievement. Students' sex had no significant effect on career maturity.

In summary, the ANOVA analysis of scores on the CMIAS indicated that the only difference in students' career maturity was due to English achievement. Neither treatment conditions nor sex had any significant effect on career maturity. A supplemental ANCOVA analysis supported these conclusions.

Career Self-Awareness

Career self-awareness refers to students' self-knowledge regarding their abilities, attitudes, interests, and values as they relate to the world of work. Increased career self-awareness as measured by the SAS is assumed to indicate a better understanding of one's personal characteristics related to careers.

The results of this study indicate there were no significant differences among the three experimental conditions in the facilitation of career self-awareness. Neither the ACT Career Planning Program nor the DAT Career Planning Program were significantly more effective in facilitating career self-awareness than the brief career guidance unit.

There were differences in career self-awareness across English achievement levels and sex. The ANOVA analysis of scores on the SAS showed that students' career self-awareness was directly related to their English achievement. Students with high English achievement demonstrated significantly more career self-awareness than students with average achievement, and students with average English achievement demonstrated significantly more career self-awareness than students with low achievement.

The ANOVA analysis also revealed that females in this study demonstrated greater career self-awareness than males. However, a supplemental ANCOVA analysis, which controlled error variance due to language achievement, showed no difference in career self-awareness between males and females. Therefore, it is concluded that the difference in career self-awareness between females and males found in this study was due to higher English achievement among female students.

In summary, differences in career self-awareness found in this study can be attributed to differences in students' English achievement. Treatment conditions and sex had no significant effect on students' career self-awareness.

Career Exploration

Career exploration refers to behavior directed toward gaining information regarding education or training, careers, career options or personal information related to

careers. Students with higher scores in career exploration as measured by the CEBI are assumed to have made a greater effort to gather career related information.

Results from this study indicate that there was no significant difference among the three treatment conditions in their facilitation of career exploration behavior. Students who participated in the ACT Career Planning Program and the DAT Career Planning Program demonstrated no more career exploration behavior than students who participated in a limited career guidance unit.

There were differences in career exploration behavior among different English achievement levels. Students with average and low achievement levels demonstrated significantly more career exploration behavior than students with high English achievement levels. There was no difference in career exploration behavior between males and females.

In summary, English achievement accounts for the only differences in career exploration behavior found in this study. Neither treatment conditions nor sex had any significant effect on career exploration behavior.

Summary of Conclusions

The experimental design used in this study makes it impossible to determine the effectiveness of the experimental conditions for facilitating career development. However, it can be concluded that there was no significant difference among the ACT Career Planning Program, the DAT

Career Planning Program, and a brief career guidance unit in the facilitation of career maturity, career self-awareness, and career exploration.

The results of this study indicate that English achievement may be related to career maturity, career self-awareness, and career exploration. Students with high or average English achievement demonstrated greater career maturity than students with low English achievement. Students with high English achievement also exhibited more career self-awareness than average or low achievement students. Average English achievement students demonstrated more career self-awareness than low English achievement students. For career exploration, the relationship is somewhat reversed. Average and low English achievement students showed significantly more career exploration behaviors than high English achievement students.

The results of this study indicate no significant differences exist between females and males on career maturity, career self-awareness, and career exploration. ANOVA analysis revealed a significant difference between females and males in career self-awareness. However, a supplemental ANCOVA analysis in which language achievement was used as a covariate showed no significant difference between females and males on career self-awareness. Therefore, it is concluded that the initial difference between sexes shown on the ANOVA analysis was a function of language achievement rather than sex.

Implications

The results of this study have several implications for school counselors regarding the use of career guidance testing programs.

Treatment Conditions

It is noteworthy that neither the ACT Career Planning Program nor the DAT Career Planning Program was found to be any more effective than a brief career guidance unit for facilitating career maturity, career self-awareness, or career exploration. It is important to realize that the career guidance unit used in this study was included mainly to control for any Hawthorn effect. It was not intended to be a comprehensive and intensive intervention. Thus, the failure of the ACT and DAT Career Planning Programs to be more effective than the guidance unit in facilitating any of the three dependent measures is important. The results suggest that the ACT Career Planning Program and the DAT Career Planning Program, as used in this study, are questionable when the time and expense required to use them are considered.

The failure of the ACT and DAT Career Planning Programs to have been significantly more effective than the guidance unit may be due to the way the testing programs were implemented in this study. For instance, tests were administered over a two-day period and four weeks later the results were interpreted for students in a large group guidance session.

Some of the supplemental materials which come with the ACT Career Planning Program were not used. This traditional and common usage of test and interpret approach may not produce the desired benefits from programs like the ACT and DAT Career Planning Programs. It is possible that both of these career guidance testing programs could be more effective if used in the context of a comprehensive career guidance unit comprised of a variety of experiences over an extended period of time.

The results of this study should not be used to imply that career guidance testing programs are of no value. A more accurate conclusion might be that the "test and interpret" approach to career guidance testing used in this study is probably ineffective and cannot be recommended.

Achievement Groups

The only significant differences found in this study were among different English achievement level groups. Generally, students from higher English achievement levels demonstrated greater career maturity and career self-awareness than students from lower English achievement levels. Students from lower English achievement levels reported more career exploration behaviors than students from higher English achievement levels.

The results of this study suggest that one means of facilitating students' career development might be to help them achieve academically in school. By helping students

improve their academic skills, counselors might also add to students' career development.

The finding that students with average and low English achievement levels reported more career exploration than students with high achievement levels may indicate that the average and low level students were more actively seeking career information. Perhaps the career development of average and low achieving students can be facilitated by making appropriate career information easily accessible to them. School counselors might facilitate career exploration of low achieving students by providing concise and easily understood career information that is readily accessible and designed for them.

Recommendations

The conclusions drawn from the results of this study led to several implications:

1. Career guidance testing programs are questionable considering the time and expense they require, especially when used in the limited, but traditional and common test and interpret approach.
2. Achievement level may be related to career development. Guidance interventions which help students improve their academic achievement might indirectly also facilitate students' career development.

3. Average and low achievement level students may actively seek concise, easily understood career information if it were made readily available to them. Frequent use of such information might facilitate these students' career development.

Based upon these implications, there are several recommendations relevant to counseling practices and research.

Recommendations for Counseling Practices

1. Career guidance testing programs should not be used in the traditional "test and interpret" fashion. They are neither cost nor time effective. Rather than simply testing students and briefly interpreting the results of those tests, school counselors need to explore more effective methods of utilizing career guidance tests within the context of a comprehensive career guidance program.
2. School counselors need to make career information readily available to students. Evidence from this study indicated that average and low achieving students actively seek such information, perhaps more so than high achieving students.

Recommendations for Further Research

1. Research is needed to investigate the effectiveness of career guidance testing programs within the context of a comprehensive career guidance program. Therefore, a study which compared an extended career guidance intervention containing a career guidance testing program with a career guidance intervention which did not contain a testing program could help to determine the utility of career guidance testing programs.
2. Further research is needed to determine what types of supplementary activities or interventions could be used in conjunction with career guidance testing programs to maximize students' career development.
3. This study showed that English achievement may be related to career development. Research is needed to determine how guidance interventions facilitate students' academic achievement and career development.

The results of this study indicate that career guidance testing programs have a limited impact on students' career development when used in the traditional "test and interpret" fashion. If career guidance testing programs are to warrant the time and expense required to implement them, more effective strategies for their use must be developed.

APPENDIX A
GUIDANCE SESSIONS FOR CONTROL GROUP

Session One

Purpose: To provide information about education and training necessary for career planning.

Materials needed: None

Approximate time required: 50 minutes

Procedures:

- I. The leader begins the session by saying, "Today and tomorrow we will be discussing topics related to career planning. One thing students need in order to make career plans is knowledge about the kinds of education and training that will be available to them after high school. That is what we will discuss today."
- II. Lead a discussion with students on types of education and training available. As much as possible, draw the information from the students, providing help only when necessary. Lead the discussion so that the following topics are covered:
 - A. College
 1. Types of degrees: AA/AS; BA/BS; MA/MS; Ph. D./Ed. D.; Professional Degrees

2. Time required for various degrees
 3. Expense
 4. Where to get more information
- B. Vocational-Technical Training
1. Types of training available
 2. Length of training
 3. Expense
 4. Where to get more information
- C. Apprenticeship Programs
1. What an apprentice program is
 2. Length of training
 3. Amount of pay during training
 4. Where to get more information
- D. On-the-Job Training
1. What on-the-job training is
 2. The varied nature of on-the-job training

III. End the session by discussing the advantages and disadvantages to each of the education/training options discussed.

Session Two

Purpose: To familiarize students with the values they hold toward the world of work.

Materials needed: Overhead projector or chalkboard.

Approximate time required: 50 minutes

Procedures:

- I. Begin the session by briefly reviewing session one.
- II. After reviewing session one, say, "People are often unfamiliar with the attributes they really desire in a job. You may not have thought about the things you would value in a job. We are going to have an activity which will help you examine your career options."
- III. Tell students they are to imagine that they are graduating from high school tomorrow and have had the following job offers.

(Put these on the board or an overhead.)

- A. Maintenance worker on the Alaska pipeline. This job has excellent pay (\$50,000/year). However, it requires that you live with other workers in barracks in virtual isolation for 11 months of the year. There is one month paid vacation.
- B. Assistant cruise director on a luxury cruise ship. Room and board are provided on the ship. The starting salary is \$12,500 per year. There is a chance to advance to cruise director at a salary of \$22,000 per year after two years of experience. However, there is also a chance of being laid off periodically.
- C. Demonstrator/salesperson for a large computer firm. The job requires that you travel around the country doing sales demonstrations for computer systems. Starting salary is \$12,500 during a

three month training period. After training, the salary goes to \$18,000. There is excellent potential to move up in the company and earn an excellent salary.

- IV. Go over each job. Make sure students understand each job and answer any questions they have.
- V. After each job has been described and any questions have been answered, divide the group into smaller groups of five or six students. In the small groups have each student tell the small group which job they would choose and why. After each group member has had a turn, each group should list on a sheet of paper the advantages and disadvantages of each job.
- VI. After the small groups have finished their tasks, reassemble into one large group. Have a reporter from each group read the advantages and disadvantages of each job compiled by their group. Use discussion to compare and contrast the lists from each group.
- VII. End the session by having each student complete this sentence aloud: "The most important job value for me is _____."

Session Three

Purpose: To help students examine their interests and abilities.

Material needed: Overhead projector or chalkboard; paper and pencil for each student.

Approximate time required: 50 minutes.

Procedures:

- I. Begin session by reviewing sessions one and two.
- II. Divide the large group into smaller groups of five or six students. While in their small groups, each student is to write his answer to the following question (put questions on board or overhead projector):
 1. I would prefer to work primarily with _____ (people; data; things).
 2. I would like to work _____ (inside; outside).
 3. I would like to work in a/an _____ (rural; urban) setting.
 4. I would like to work with people _____ (most of the time; some of the time; never).
 5. I _____ (would; would not) like to work in a job where I have to tell other people what to do.
 6. I _____ (would; would not) like to work in a job that places a great deal of responsibility on me.
 7. I would like a job which required me to work primarily with my _____ (hands; mind).
 8. I would like a job which _____ (would; would not) require me to be creative.
- III. After everyone has answered the questions, have each person read their answers to the group. After hearing the answers, every member of the group should try to suggest a job for that person which would match most of

their interests. After each job is suggested, the person receiving the suggestions should comment as to whether they think they would be good at the suggested job and explain their feelings.

- IV. End the session by having each member complete the following statement aloud in his/her small group:

"Today, I learned _____."

APPENDIX B

CAREER EXPLORATORY BEHAVIOR INVENTORY

Student's Name _____.

This inventory asks you questions about what you have done during the last four weeks to find out more about yourself, education or careers. Please read each question and think about your answers carefully.

Answer the following questions by checking either YES or NO. If you check YES, then answer the question, "How many times?" You can estimate if you're not sure.

EXAMPLE:

	<u>YES</u>	<u>NO</u>	<u>HOW MANY TIMES?</u>
During the past four weeks, have you talked to someone about a part-time job?			

During the past four weeks, have you talked with any of the following persons about your career test (ACT or DAT) profile, educational plans, or career possibilities?

1. A school counselor or the occupational specialist?
 2. A teacher or other adult at school?
 3. Your parents or other adult relatives?
 4. An adult outside of school, other than parents or relatives?
 5. Other students or friends?
-

During the past four weeks have you done any of the following activities?		<u>YES</u>	<u>NO</u>	<u>HOW MANY TIMES?</u>
6.	Made an appointment for a future meeting with someone at school to discuss your educational program, career goals, or career test (ACT or DAT) scores?			
7.	Visited the Career Information Room in the Guidance Office?			
8.	Looked at or read something (catalogs, booklets, etc.) about educational or training programs or schools?			
9.	Looked at or read something (booklets, magazines, books, etc.) about careers and occupations?			
10.	Gone to some other resource outside of school to get more information about certain jobs, education, training, or military programs?			

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BIOGRAPHICAL SKETCH

R. Wiley Dixon was born in Center Hill, Florida, on October 14, 1949. He graduated in 1967 from South Sumter High School in Bushnell, Florida. In August, 1971, he received his Bachelor of Arts degree in psychology from the University of Florida. After graduation, Wiley worked from 1971 through 1976 as an exceptional education teacher at Wildwood High School, Wildwood, Florida. During that time, he entered graduate school at the University of South Florida and received a Master of Arts degree in psychology in 1978.

From August, 1976, through June, 1981, Wiley worked as guidance director at Wildwood High School. In June of 1981 he resigned his position to become a full-time doctoral student in the Counselor Education Department at the University of Florida. He received his Specialist in Education degree from the University of Florida in August of 1982. Since August, 1982, Wiley has been employed as Supervisor of Guidance for Alachua County Schools.

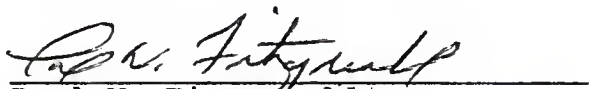
Wiley is married to the former Katherine Ann Veal, from Lake Panasoffkee, Florida. They have two children, Joshua, four, and Sarah, three months.

Wiley is a member of the American Association for Counseling and Development, American School Counselors Association, Florida Association for Counseling and Development, Florida School Counselors Association, and Florida Association of Counselor Educators and Supervisors.

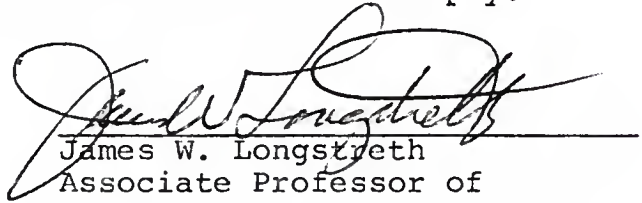
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Professor of Counselor
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Professor of Counselor
Education

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James W. Longstreth
Associate Professor of
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and Supervision

This dissertation was submitted to the Graduate Council of the Division of Curriculum and Instruction in the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

April, 1984

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